FROM HOUSING TO HUMAN SETTLEMENTS: THE ROLE OF PUBLIC SPACE IN INTEGRATED HOUSING DEVELOPMENTS

Michelle Samantha McGarry

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Student ID: MCGMIC008

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Supervisor: A/Prof Nancy Odendaal

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Name: Michelle Samantha McGarry

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ABSTRACT

Since 1994 the post-apartheid South African Government has recognized the importance of housing in improving the quality of life of its citizens. Following 10 years of a housing delivery model that saw the provision of nearly 1.6 million houses, the National Government introduced a new policy that sought to shift away from an emphasis on housing and rather a holistic focus on the quality of the settlement established. This new policy, Breaking New Ground (BNG) promoted the establishment of well-managed, liveable and equitable settlements incorporating social and economic infrastructure. The quality of the urban environment and the quality of public spaces within urban developments has been identified as contributing towards improving quality of life within these settlements. In mixed-income, integrated settlements – like those BNG claims to produce – the importance of public space is further emphasised because it compensates for limited space of the private home. However, these spaces are often considered as "nice-to-haves" and neglected in favour of basic services or housing. Despite the importance of public space and its contribution to the creation of sustainable human settlements, these spaces, although planned for in the initial phases of a development, still remain largely undeveloped.

This research therefore questions whether public spaces within integrated housing developments are being used as intended. It also questions to what extent the necessity for increased urban densification has affected the provision of public space in integrated housing developments. This research attempts to answer the question from the perspective of professionals involved in the planning and implementation of integrated housing developments and not from the perspective of residents. A qualitative research approach has been adopted. Three settlements each representing an integrated housing development implemented in line with BNG principles and incorporating public spaces were selected as case studies and in-depth interviews with professionals involved in the planning and implementation of these developments were conducted. The research found that while public spaces are considered as beneficial and are included in the planning stages of a development, in reality the lived experience often differs. While the objectives of housing policies are to create sustainable human settlements, professionals still struggle to translate these objectives into practical guidelines and standards. Finally, it was observed that while public spaces do play a role in the shift from housing to human settlements, the process is one that occurs incrementally and over a period of time.

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ABSA	Amalgamated Banks of South Africa
BNG	Breaking New Ground
CSI	Corporate Social Investment
CSIR	Council for Scientific and Industrial Research
GDP	Gross Domestic Product
GWA	Gary White and Associates
JPC	Johannesburg Property Company
NDP	National Development Plan
OVB	Olievenhoutbosch
POS	Public Open Space
PPP	Public-Private Partnership
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
RSDF	Regional Spatial Development Framework
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SPLUMA	Spatial Planning and Land Use Management Act
TVD	Thorntree View Development
UDF	Urban Design Framework
UN	United Nations
UNECA	United Nations Economic Commission for Africa

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

"Housing matters for what it does. The importance of housing – ways and means, as well as end products – lies in what it does for everyone concerned, and above all for the users" – John F. C. Turner, Housing: Its Part in Another Development, (1980, p. 10)

Our landscape, whether planned or unplanned, human-made or natural, provides the setting for all of our activities. To a large extent our physical and cultural environment structures the way we live our lives (Graham, 2004). Quality of life and our overall well-being are greatly influenced by the quality of the surrounding built environment. Although humans structure the urban landscapes in which we live, our lives are also unavoidably structured by those very landscapes (Doughty, 1981; Giddens, 1984; Massey, 1985; Hall, 1988).

Since 1994 one of the South African Government's guiding objectives has been to improve the quality of life of its citizens. Acknowledging the relationship between the built environment and quality of life, the RSA Government relied on strategic policy interventions to guide development and meet the needs of low-income households. Central to improving quality of life was to improve living conditions of households through the provision of housing. At the advent of democracy the magnitude of the housing crisis was immense and to tackle the problem strategies like the Reconstruction and Development Programme (RDP) were introduced. The South African National Government aimed to address the housing crisis through the scale delivery of subsidised housing for low income households. This quantitative approach focused predominately on individual houses (top structures) and to a lesser extent on the quality and performance of the settlement. Subsequently, settlements that were developed in accordance with RDP principles have been criticised for their poor housing quality, location, monotonous design and lack of social infrastructure (Bond & Tait, 1997), (Charlton, et al., 2014) (Huchzermeyer, 2003) (Ruiter, 2009) (Watson, 2009).

Ten years after the introduction of RDP, recognising the qualitative shortcomings of RDP, the housing rhetoric started to change and we saw the introduction of terms like 'sustainability', 'integrated' and 'human settlements'. *The Comprehensive Plan for the Development of Sustainable Human Settlements* (commonly known as Breaking New Ground, BNG) reinforced South African National Government's new vision "to promote the achievement of a non-racial, integrated society through the development of sustainable human settlements and quality housing" (Department of Housing, 2004, p. 1). The policy aims towards a shift in thinking solely about housing and rather to focus on human settlements and encourages planning techniques that make settlements 'more liveable'. BNG claims to produce

integrated sustainable human settlements by making use of participative, multi-dimensional approaches which, in contrast to RDP allows citizens to become local participants in human settlement rather than simply recipients of free, government-subsidised housing (Smeddle-Thompson, 2012).

Over the last 20 years of democracy the RSA Government has initiated two different policy imperatives: the Reconstruction and Development Programme (RDP) (1994) and the Breaking New Ground policy (BNG) of 2004. Perhaps the major difference between the policies is the shift from a quantitative approach, which at the time was necessary given the scale of the housing challenge to a more qualitative approach which focuses more on the quality of the environments produced. One of the driving forces behind the change from RDP to BNG was an observation that the people inhabiting the environments of the past were increasingly becoming dissatisfied with the quality of the product delivered to them. With a lack of infrastructure and social facilities and amenities, Donaldson, 2001 argues that people feel no differently to living in a shack settlement, even though housing is supposed to be empowering them (Donaldson, 2001). Service delivery protests and the results of several post-occupancy studies highlight some of this dissatisfaction (Deloitte & Touche, 2013) (Moolla, et al., 2011).

According to some urban planners, urban public spaces – streets, squares and promenades – are the some of the most important forms of social infrastructure in urban settlements (Southworth, 2007). Ewing (2005) echoes this statement noting that primary investment in public space is crucial in areas that have minimal access to valuable outdoor space especially in low-income settlements. “They [public spaces] act as ‘urban living rooms’, especially for people living in overcrowded conditions; they connect communities and inform people’s ‘mental maps’ of the city. Public spaces are particularly important in the lives of poorer people, whose housing is often too small for the household’s needs. Here, public space effectively extends the house or shack, providing space for social and economic activities. These spaces also accommodate the informal events that are essential to the process of urban living.” (City of Cape Town, Planning & Development Directorate, 1999, pp. 51-52).

In the context of this research, drawing on the definitions above, public space is defined as those spaces designated for public use that exist outside of the private dwelling and are accessible to the public. They can either be defined as hard open spaces encompassing both squares and streets as well as soft open spaces such as parks. The research will also include the public facilities and amenities in its definition of public space as these spaces play a valuable role in the provision of basic services to communities and still fulfil the role of improving their quality of life.

Despite the recognition that public spaces have an important part to play in the creation of sustainable and liveable settlements, the trend observed around the world has been of shrinkage rather than expansion of the public realm (Tonnelat, 2010).

Southworth (2007) identifies this trend within the City of Cape Town, noting that conventional public spaces are viewed as extravagant and "nice to have" (2007, p. 4). She goes further to say that "open space is regarded as unaffordable to provide and maintain, and cannot compete for popular and political support in the face of demands for basic services" (2007, p. 4) . With rapid levels of urbanisation and the current housing backlog, provision of housing is often the overriding concern for most Municipalities. The increasing scarcity of well-located land for housing developments means that public space is often co-opted by private developers for densification and provision of basic services, which is perceived as a more efficient use of available land.

1.2 Research Motivation

The motivation for the research also stems from the researchers own work experience which has been predominately focused on the civil engineering and project management aspects involved in the provision of large-scale integrated housing developments. The research incorporates several of the themes covered in the coursework; it addresses the delivery of urban services and infrastructure to rapidly growing urban populations, urban policy trends, and sustainable development in the delivery of urban settlements.

1.3 Research Purpose

1.3.1 Problem Statement

One of the primary objectives of Breaking New Ground (BNG) is to 'utilise housing as an instrument for the development of sustainable human settlements, in support of spatial restructuring' (Republic of South Africa. Department of Housing, 2004, p. 2). BNG also highlights the importance of creating a holistic settlement through the inclusion of social and economic infrastructure. In low-cost housing developments much of daily life is spent within the public realm. However, a growing trend towards higher density development poses a threat to these spaces. In addition to the threat posed by densification, the quality of public spaces provided is also in question, with the perception that provision of public space as non-essential, a large portion of spaces provided for public use remain underdeveloped.

1.3.2 Research Objectives

To identify if public space and facilities are required for the creation of sustainable human settlements and to what extent these spaces are being used as intended in integrated housing developments.

The research questions include:

1. How are public spaces conceptualised in policy and implemented in integrated housing developments?
2. Does public space contribute to improving the quality of life of residents in integrated housing developments? Do built environment professionals in Gauteng believe that public space is important in integrated housing developments?
3. To what extent has necessity for increased urban densification affected the provision of public space in integrated housing developments? Are public spaces being utilised as intended?
4. What is the role of South African local government and legislation in the provision of public space and facilities?

These objectives can be summarised in the following hypothesis: public spaces and facilities in integrated housing developments, implemented in accordance with Breaking New Ground Principles are not being used as intended, this is despite the recognition that good quality public spaces and facilities are important elements of a sustainable human settlement.

1.4 Scope of the Research

The study does not seek to investigate the post-occupancy satisfaction of residents or to analyse the implementation of housing policy from the perspective of the people residing in the settlements. The research will approach the research questions from an institutional perspective and will seek to investigate the functioning of public spaces in sustainable human settlements from the point of view of those responsible for their implementation.

The research makes use of three case study housing developments implemented in accordance with BNG principles to understand what extent provision of public space and facilities was made in the planning stages of each development and thereafter to determine if these spaces are being used as initially planned. To answer the question of what role local government plays in the provision of public space as well as whether built environment professionals consider public space important, the research made use of semi-structured interviews with individuals involved in the implementation of housing developments. Interviews were conducted with professionals from both the private and public sector and included town planners, urban designers and housing development managers.

1.5 Research Limitations

'There is no universal answer and no model for a sustainable African city' (Local Agenda 21, 2000, p. 2) in (Donaldson, 2001). However, the use of case studies to investigate the relationship between what has been proposed according to national legislation and what has been delivered provides opportunity to better understand the contemporary South African City (Donaldson, 2001). To test the hypothesis,

this research will make use of three case study BNG housing developments to examine the phenomenon in specific contexts.

Case study research examines and investigates a phenomenon in its exact situation and allows the researcher to observe and collect comprehensive data. The researcher is employed as by a Consulting Civil Engineering Firm involved in the provision of infrastructure for urban and rural developments and therefore has experience in the design and implementation of integrated urban housing developments. This experience subsequently provided the researcher with several case study developments from which to draw on and as a result the research was limited to case study developments that the researcher was familiar with and had prior knowledge of. These settlements were located in the Gauteng Province and featured involvement from the private sector in the form of Private Sector Developers tasked with developing housing on behalf of or in conjunction with various spheres of RSA Government. The case study developments are therefore not representative of all housing developments in South Africa.

The research also makes use of semi-structured interviews with built environment professionals from both the private and public sector who have experience with planning and implementation of housing developments. A total of seven (7) interviews were conducted over a period of 3 months. The sample included predominately professionals from the private sector who have experience working in partnership with local government. The research was therefore limited with regards to input from local government officials. While attempts were made to incorporate more views from local government the timeframes and availability of resources were a constraint.

1.6 CHAPTER OUTLINE

This thesis consists of nine chapters and is organised as follows: chapter one introduces the research problem and proves the rational and objectives to the research. Chapter Two provides the reader with an overview of housing theory in the global south as well as some of the trends that have emerged in the housing landscape over the past 60 years. Chapter Three reviews the translation of theory into housing policy frameworks. This Chapter describes how spatial planning and land use management are linked to housing policy and how these aspects can contribute to the creation of sustainable human settlements. Chapter four goes further by examining the role public spaces play in the creation of sustainable human settlements and how these spaces are managed. Chapter Five outlines the research methodology while Chapter Six describes the three case study developments as well as the findings of the site visits and mapping exercise with Chapter seven presenting the findings and analysis of the perspectives of the professionals' who were interviewed. Finally, Chapter eight will conclude the research and outline recommendations and areas for further research.

CHAPTER 2: UNDERSTANDING HUMAN SETTLEMENTS

After the 1994 elections, RSA Government committed itself to developing more liveable, equitable and sustainable cities. The Housing White Paper boldly declares that the time for planning is over and that the time for delivery has arrived (Department of Housing, 1994). Key elements of this framework included pursuing a more compact form, facilitating higher densities, mixed land use development, and integrating land use and public transport, so as to ensure more diverse and responsive environments whilst reducing travelling distances (National Department of Housing, 2004). However, despite the RSA Government's best intentions many authors have argued that the spatial inequalities of the apartheid legacy are still evident (Bond & Tait, 1997) (Schoonraad, 2000) (Rust, 2006) (Huchzermeyer, 2003)

The post-apartheid challenge continues to be how to integrate people into the economy and society in South Africa (South African Cities Network, 2014). Therefore to give effect to the broader development goals, the role of space and the transformation of the built environment should be at the forefront (South African Cities Network, 2014). This sentiment is echoed by Landman et al (2009), stating that the quality of life of people in cities is closely linked to the quality of the built environment. As discussed in the Chapters to follow, the acknowledgment of this link lead to the formulation of a policy that seeks to promote the development of sustainable settlements with a particular emphasis on integration and densification (Landman, et al., 2009). The Breaking New Ground (BNG) Policy was developed as a comprehensive plan for the development of sustainable human settlements and advocates for the "development of sustainable human settlements and quality housing" (Department of Housing, 2004, p. 1). As noted by the South African Cities Network there are various interpretations of what exactly sustainable human settlements are; BNG defines them as "well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which the depend for their existence and result in sustainable development, wealth creation, poverty alleviation and equality" (National Department of Housing, 2004, p. 12).

The aim of this research is to understand the role of public space in integrated housing developments and to what extent public space is contributing to the creation of sustainable human settlements. This chapter will provide a conceptual understanding of key concepts applicable to this research, namely the notion of sustainable human settlements, what is meant by integrated housing developments and the definition of public space within the confines of this research. The chapter however will start with locating the study area in the context of housing theory in the Global South.

2.1 HOUSING THEORY AND THE GLOBAL SOUTH

It is necessary to first locate the study within the housing theory and practice in Global South. The global South, which comprises of countries in Latin America, Asia and Africa, has seen rapid urbanisation and it is predicated that developing countries, predominately located in the global South will triple their built-up urban area between the years 2000 and 2030 (Leung & van Noorloos, 2016) .

Despite rapid urbanisation and high economic growth in cities of the global South – it is estimated that 40% of Africa's population that now lives in cities produces 80% of its Gross Domestic Product (GDP) (UN-HABITAT, 2010) – income inequality still persists with the around 50% of Africans earning incomes below US$ 1.25 per day (UN-Habitat, 2014). Growing urban populations, the influx of semi-skilled migrant workers from rural areas coupled with disparities in income have resulted in widespread poverty (African Centre for Cities, 2015). The pace of urbanisation and its predominance in the cities of developing countries has raised the question of how this change is to be understood and how those tasked with shaping the built environment must plan for urban growth in some of the countries least able to cope with it (UN Habitat, 2009).

While responses to urbanisation and poverty in the global South have changed throughout the years, the provision of housing has still remained a central element in most of the interventions (African Centre for Cities, 2015). Quantitatively, the delivery of housing units in the global South is impressive – in South Africa the post-apartheid RDP policy managed to deliver almost 3 million homes from 1994 until 2015 (Turok, 2015). However despite this success housing practitioners are still faced with a housing backlog that is increasing instead of decreasing. The reality is that majority of this new urban population will be housed in urban 'slums' – defined as low-income settlements categorised by high densities, inadequate housing conditions (structure and services) and 'squalor' (UN Habitat, 2003). As poverty and unemployment increase city dwellers are forced to turn to the informal sector to earn an income and to provide shelter. Traditional approaches to urban planning struggles to deal with both economic and residential informality and instead often sets about criminalising the informal sector (Watson, 2008). Watson (2008) further highlights the 'widening gap between the norms and objectives informing planning and the harsh realities of everyday life in cities of the global South' a sentiment echoed by other authors (Landman, et al., 2009), (Watson & Odendaal, 2012), (Huchzermeyer, 2001).

Urban planning in the global South has largely relied on the remnants of its colonial predecessors. Most of the approaches to planning comprise of variations of urban planning used in European and American cities in the early 20th century (Watson, 2008). Typically comprising of detailed land use plans 'depicting the desired future of an urban area some 20 years hence and it is underpinned by a regulatory system which assigns use rights in land and manages any alteration of these, in

conformance with what is called a “master plan”’ (Watson, 2008, p. 2261) – this master planning approach has seen harsh criticism in the North (Todes, et al., 2010), but despite this, it is still the norm in most of the global South. Zoning and visions of the ‘ideal city’ are common place in most planning departments and as Watson citing a study by Devas (2001) notes, most of these planning and building standards are wholly unsuited to the requirements of the poor.

2.2 Trends and Development in Housing Policy

The initial point of departure for this section will be a discussion of global trends in housing development. Trends in housing policy in the global South are not clearly defined linearly – there is no fixed start and end date – instead over time there is often an overlap between approaches to housing policy and the extent to which the policy is applied (Harris and Giles (2003)). Housing policy development can be categorised into three broad phases: 1950 till 1960s: Public housing and slum clearance; 1970 till 1980s: Sites-and-services and upgrading and 1980s till 1990s: Enabling approach.

As highlighted in the previous Section, during the 1950s the approaches to housing development in the post-colonial global South were strongly influenced by planning norms in the global North continuity with colonial approaches to housing development. Rapid urbanisation in the global North lead to the development of urban slums categorised by overcrowding and undesirable living conditions. To overcome these issues the state embarked on a process of urban master planning, slum clearance and public and state-developed rental housing (African Centre for Cities, 2015). Through land-use, zoning and strict development controls the state undertook the role of prescribing the future layout of urban areas ((Hall, 1988) cited in (UN-Habitat, 2014)).

However, by the end of the 1960s it became increasing evident that the provision of formal housing and slum clearance was becoming too costly and no longer benefiting the poorest residents in urban areas (African Centre for Cities, 2015). The global approach to housing at the time needed to shift away from a demand driven approach to a more supportive approach, in which the state was not solely responsible for the provision of housing that it deemed adequate.

At the time of mass slum clearance and the realisation that formal housing was becoming too costly to implement, theories proposed by authors like John Turner, who after studying informal dwellers in Peru, proposed aided self-help as an alternative to state-built housing. Turner’s studies revealed how people living in informal settlements were building their own houses with their own resources and labour without the assistance of the government or private sector (Moser & Stein, n.d).

Turner’s research aimed to shift thinking about informal settlements as part of the problem and something to be eradicated; instead these settlements should be viewed as an alternative solution to

the provision of low-income housing. Pugh (2001) notes that Turner's theory revolved around principles of affordability, cost-recovery and replicability – instead of conforming to Built Environment norms and standards, this approach to housing delivery is directly linked to a household's affordability. Compared to state-built housing, self-built housing is as summarised by Mathéy (1992) is much more adequate in meeting people's needs because housing users know their own needs best and much cheaper and affordable because they use resources more effectively.

During this phase of housing policy rhetoric two approaches to informal settlements were adopted, firstly a 'site-and-service' approach and secondly a process of 'in-situ upgrading'. The former involved centres around the relocation of former slum dwellers to stands that were supplied with connections to municipal services – water, sanitation, electricity. The in-situ upgrading approach was to improve the living conditions within an informal settlement with minimal disruption to residents' lives and livelihoods (Huchzermeyer, 2008).

In the global South the site and service approach was generally preferred to in-situ upgrading. Commonly referred to as "toilet towns" (Huchzermeyer, 2001, p. 305) – site and services projects were deemed easier to roll-out administratively but as Pugh (2001) points out these schemes often neglected the poorest of the poor. In the South African context the apartheid government included site-and-service schemes in its housing policy, however the households relocated to these sites often failed to raise sufficient capital to improve their dwellings a statement echoed by Huchzermeyer (2001) who notes that many of the settlements remained as informal as those they intended to replace (African Centre for Cities, 2015).

Despite Turner's influence on housing policy in the 1980s, his theories came under harsh criticism for "romanticising self-help building which obscured and perpetuated the suffering experienced by the poor for whom self-build was the only alternative" ((Ward, 1982) cited in (African Centre for Cities, 2015, p. 10)).

The World Bank also acknowledged that sites-and-services were generally too expensive to implement and failed to reach the poorest urban residents (African Centre for Cities, 2015). The projects failed to meet the intended objectives of affordability, cost recovery and replicability. The recovery of costs proved to be a significant issue as often it was not possible to provide services at a level of service and standard that would be accepted by engineers, town planners and policy makers (Pugh, 2001).

At the time the World Bank started to shift away from sites-and-service schemes and in-situ upgrading to a more programmatic approach which sought to enable housing finance institutions. The World Bank's approach to housing delivery was more market-based and recommended several major enabling instruments that governments should adopt to enable their housing markets. In practice, the

provision of capital subsidies and development of mortgage finance allowed private developers to once again enter the housing space. The state became the facilitator of the housing market instead of a provider of housing opportunities (Moser & Stein, n.d).

The re- emergence of private developers and the facilitator role adopted by the state has brought about a return to mass scaled-supply driven housing provision. The construction of 'mega-housing projects' has been identified by the Department of Human Settlements as a means to 'boost delivery of housing and to benefit from economies of scale' (Turok, 2015). In her budget speech, the Minister of Human Settlements, Ms Lindiwe Sisulu stated that 'The delivery of houses has dropped by 25% over the past five years… [this] is very serious especially against the backdrop of increasing urbanisation and promises made' (Sisulu, 2014). As Turok, 2015 comments, the Minisiter has identedifed mega-housing projects and the role out of housing on scale as a pancea for the current housing delivery issues.

The return to the mass housing delivery models of the post-colonial era has again placed an emphasis on strategic national urban development plans, the roll out of bulk infrastructure projects and the development of new 'mega-housing projects' (Watson, 2013). This resurgence in delivery of mass standardised housing units only further emphasises the segregated socio-spatial form, increasing the cost of bulk infrastructure needed to services these developments and has a negative effect on the livelihoods of the residents living there (Huchzermeyer & Misselwitz, 2016) (Cities Alliance, 2011).

Housing policy in the global South has evolved over time and the influence of policies and theories from, not only the global North, but international donors and organisations like the World Bank and the United Nations has been evident. However, despite various interventions and a shift from supply to support policies and practices, these polices have had little effect in practice, with housing backlog and service delivery protests on the rise (Croese, et al., 2016).

Furthermore, agencies such as UN-Habitat have acknowledged the limitations of enabling policies and recognised the leadership role to be played by the State when it comes to driving the provision of housing (Croese, et al., 2016). To this end, the third United Nations conference on Housing and Sustainable Urban Development – better known as Habitat III – which took place in October 2016 set out to establish a vision for sustainable urbanisation within the next 20 years.

The conference culminated in the release of the "New Urban Agenda" a document that outlines the groundwork for policies, initiatives and standards for the 'planning, construction, development, management and improvement of urban areas' (United Nations, 2017). Ultimately, what the progression of housing policy has illustrated throughout the post-colonial era to date, is that the success of housing policy is dependent on the realisation that a one-size-fits-all approach to housing policy cannot be applied in all circumstances.

2.3 THE NOTION OF HUMAN SETTLEMENTS

The previous sections aimed to provide a brief overview and background of housing trends and development within the global South. With the emergence of the New Urban Agenda and a renewed focus on the creation of resilient and sustainable cities and human settlements, this section aims to discuss the concept of human settlements in relation to the research question.

To answer the research question an understanding of what is meant by the term "human settlement" and how this differs from a "housing development" is required. Over time the concept of human settlements has evolved, but with common understanding that human settlements 'are not only about spatial aspects but also about the physical manifestation of economic and social activity' (Nkambule, 2012). The Vancouver Declaration on Human Settlements (UN Habitat, 1976) notes 'that settlements are a critical basis for socio-economic development in that places where people can live, learn and work in conditions of safety, comfort and efficiency are a fundamental and elementary need'.

Other authors also note that a community's environment reflects the activities that they are involved in and that it is crucial that human settlement planning should be based on how people use their land, how they organise themselves in space and how they give meaning to a place (Ackerman, 2016). With the rate of urbanization increasing and the subsequent adverse effects, such as the prevalence of informal settlements, also on the rise, the approach to the issue of housing and settlement creation required international attention. Nkambule (2012, p. 11) notes "these problems effectively raised the need for a holistic development approach, whereby social, environmental and economic dimensions of development would be integrated". In an attempt to deal with these issues the UN Habitat I Conference in Vancouver in 1976 was convened. At this conference the UN Commission on Human Settlements defined human settlement as the "totality of the community whether city, town or village with all the social, material, organisational, spiritual and cultural elements that sustain it" (UN Habitat, 1976)

A human settlement is therefore more than just a place to house people. The definitions above indicate that a human settlement consists of a variety of functions and must serve the needs of the people who inhabit it. Essentially a human settlement comprises of physical elements, social services and infrastructure (Nkambule, 2012). Ultimately the aim is to transform the urban environment through the integration of these elements.

2.4 INTEGRATED HUMAN SETTLEMENTS

It is evident from the above that in order for a settlement to be sustainable, it needs to take into account the needs of its current residents and understand how they intended to use the space. It must

cater to their various physical, social and economic requirements but at the same time still bear in mind the needs of generations to come. The pursuit of more sustainable human settlements requires a concerted effort by all those tasked with their development to prevent negative impact on the environment but at the same time improve the quality of life and well-being of people (Landman, et al., 2009).

Of importance to this research is how the type of settlements described above are to be achieved. The South African Housing Policy Framework, which will be discussed in detail in subsequent sections, acknowledges the need to develop sustainable human settlements with a particular emphasis on integration and densification (Landman, et al., 2009).

The Policy goes on further to state that inhabitants of sustainable settlements should "live in a safe and secure environment and have adequate access to economic opportunities, a mix of safe and secure housing and tenure types, reliable and affordable basic services". As discussed in Section 2.3 the manner in which land is utilised is significant when planning a sustainable human settlement and it should ensure a "compact, mixed land use, diverse, life enhancing environments with maximum possibilities for pedestrian movement and transit via safe and efficient public transport" (Department of Housing, 2004, p. 11). The excerpts from the policy affirm the need to focus on spatial and social integration and densification; this is to be achieved through the development of medium-density mixed housing as argued by Landman et al, (2009).

For the purposes of this research, integrated human settlements shall be understood to be medium density settlements that combined a mixture of tenure options for residents – catering to both low-income households as well as middle income households. The settlements should also include a variety of land uses, both residential and non-residential, and make provision for access to social and economic facilities.

2.5 CONCLUSION

This section focused on the evolution of housing policy and the development of the notion of human settlements. The effects of urbanisation in cities of the global South have been well documented in literature. The challenge for planners and urban professionals is how to conceptualise strategies and policies that will be resilient to the effects of urbanisation.

While housing policy has evolved over time, despite the promotion of incremental upgrading as a policy, the return to mass scaled supply driven approaches to housing provision fails to take into account the lived reality of city dwellers (South African Cities Network, 2014) and echoes the words of Turner in his research on housing priorities, settlement patterns and urban development. Turner

(1968) noted that the 'ineffectiveness of contemporary urban planning and related low-income housing policies in developing areas is mainly due to ignorance of residential needs and priorities and the consequent misunderstanding of the urban settlement process'.

Throughout the evolution of housing policy is the realisation that the provision of housing is not simply meeting the demands for physical housing structures but involves a multi-dimensional space involving social and economic elements. As Charlton, et al., 2014 p.79, comment the 'development of human settlements is a long-term process not a once off intervention and that households and the state contribute to this process in a variety of ways'.

The formulation of any policy stems from a need to provide a solution or guidance on how to solve to an issue. In South Africa, the intention of housing policy – despite the prevailing mode of implementation – has been to provide residents with "viable, socially and economically integrated communities" (Department of Housing, 1994, p. 19). However, despite its best intentions the State still views housing in terms of a dwelling structure and not in terms of a dwelling environment. The dwelling environment as described by Turner (1968) is qualitative and not quantitative or tied to material standards – instead it 'recognises that the value lies in the relationship between man and environment and not simply in physical conditions' (Turner, 1968). Turner's theories highlight a crucial aspect of this research – that in order to create a viable human settlement, requires a strategic approach that considers the inter-relationships between the land uses rather than a focus solely on top structures.

This Chapter provided a broad overview of the evolution of housing policy as well as how some of the trends in the provision of housing have changed overtime. The Chapter also provides background to some of the terms frequently used in this research, namely 'human settlements' and 'integrated development'. The Chapter therefore serves to set the scene going forward and provide a high level overview of the housing landscape in the global South. Subsequent Chapters will delve deeper into specific housing policies, standards and guidelines. As part of this research and in subsequent Chapters, a better understanding of how different land uses – especially public spaces and non-residential land uses – contribute to the dwelling environment and how they are incorporated in settlement design will be explained. The Chapter sets the scene for in the next Chapter which explores housing theory from another level – namely housing policy framework and how this framework has evolved as the trends in the provision of housing have developed over time.

CHAPTER 3: HOUSING POLICY FRAMEWORK

Section 26 of the Constitution of the Republic of South Africa, 1996, enshrines everyone's right of access to adequate housing. Since 1994, the South African state has created a stream of legislation and policies to give effect to this right (Republic of South Africa, 1996). Despite the legislation and notwithstanding the provision of 2.3 million housing units to nearly 11 million people (Tissington, 2011), the country is still has a housing crisis with over 2.1 million people lacking adequate housing (Sexwale, 2010).

Despite new housing programmes aimed to deliver quality housing to low-income and poor households, these groups continue to be excluded by the current models pursued (Tissington, 2011). Instead, we see much of the same type of housing development occurring: mass roll-out of freestanding RDP houses, BNG houses and low-income bonded houses on the periphery of cities (Tissington, 2011).

Since 1994 there have been numerous policy and statutory developments relating to housing, which attests to the board and complex nature of the housing terrain in the country (Tissington, 2011). Schoonraad (2000) argues that if 'sustainable cities were built with policy documents and vision statements alone, South African cities would have been model cities […] however the reality is that South African cities rank amongst the most inefficient and unsustainable in the world'. Part of this blame can be apportioned to the policies of separate development but in the years since 1994 these policies have changed but still the unsustainable urban form persists (Schoonraad, 2000).

This chapter will explore the South African policy content and the role policy has played in the shaping of South African cities.

3.1 OBJECTIVE OF HOUSING POLICY

According to Webster's Dictionary the word "policy" can be defined as ((Merriam-Webster, 2017)

- A definite course or method of action selected (by government, institution, group or individual) from among alternatives as in the light of given conditions to guide and, usually, to determine present and future decisions.
- A specific decision or set of decisions together with the related actions designed to implement them.
- A projected programme consisting of desired objectives and the means to achieve them.

Common to the points mentioned above is the idea that a policy should outline a desired state and a set of instructions to achieve this desired state. In terms of housing – housing policy refers to the

actions of government, including legislation and program delivery, which have a direct or indirect impact on housing supply and availability, housing standards and urban planning (The Homeless Hub, 2017).

Current housing policy in South Africa is the outcome of a process of intense negotiations within the National Housing Forum from 1992 to 1994 (Khan & Thurman, 2001). This forum comprised of a multi-party, non-governmental negotiating body responsible for researching and developing a number of legal and institutional interventions. These negotiations and investigations would later on be used by the Government of National Unity in 1994 when it formulated South Africa's housing policy (National Department of Housing, 2000).

Charlton (2004) in her overview of housing policy and debates, notes the following:

'The outcome of the discussions was seen by some as a compromise between "popular demands to deliver complete houses for all, and a concern to spread housing benefits widely" (Smit 1999: 4, cited in Charlton at al 2003: 27). This has been dubbed the 'width versus depth debate' – the idea of spreading limited resources widely to provide some housing benefit for as many people as possible, versus the notion of providing a more robust, comprehensive and complete unit for fewer people. The middle ground that was struck aimed wide to target mass delivery, with a strong emphasis on land, tenure and services, but also included a basic 'starter' house or 'top-structure' as well – i.e. it went beyond the pure site-and-service approach of the Urban Foundation and Independent Development Trust in the late 1980s and early 1990s (which provided land and basic services only with no house).'

The National Housing Policy intended to address the issue of fragmented cities and a dysfunctional housing market observed in the problems inherited by the post-Apartheid government both on the supply and demand sides (Govender, 2011).

If we link back to the definition of policy outlined at the start of this section; the desired or intended outcome for housing in South Africa was outlined in the National Housing Policy's vision. South Africa's Housing vision comprised the overall goal, to which all implementers of the housing policy should work. The vision is outlined in the definition for 'housing development' contained within the Housing Act, 1997 (N0 107 of 1997, p 19) states that:

"…the establishment and maintenance of habitable, stable and sustainable public and private residential environments to ensure viable households and communities, in areas allowing convenient access to economic opportunities, health services, educational and social amenities, in which all citizen and permanent residents of the Republic will have access to:

(a) Permanent residential structures with a secure tenure, ensuring internal and external private and providing adequate protection against the elements; and
(b) Potable water, adequate sanitary facilities and domestic energy supply

3.2 THE RECONSTRUCTION AND DEVELOPMENT PROGRAMME

The RDP served as the newly elected RSA Government's blueprint for development. The standard of living in the country was analysed and recommendations on ways to improve conditions for the poor were proposed.

At the time of its formulation, the analysis of present living conditions estimated that 17 million individuals were living below internationally recognised minimum standards (Development Action Group, 2009). Far-reaching programmes aimed at improving the living conditions of the poor were envisioned. Housing, the provision of basic services, education and job creation were key areas of intervention. The overall approach taken by national government in its housing policy therefore came from two angles (Rust, 2006):

- Firstly, the RSA government aimed to address the housing crisis through the scale delivery of subsidised housing for low income households;
- Secondly, the RSA government sought to normalise the subsidised housing market in such a way that it could operate in the same way as the non-subsidised market. Emphasising housing as an asset and the role it plays in poverty alleviation was important angle for national government to pursue.

The RDP was committed to establishing viable communities in areas close to economic opportunities and to health, educational, social amenities and transport infrastructure (The African National Congress, 1994). Quantitatively the Programme was successful, delivering nearly three million houses (South African Cities Network, 2014)

The strong delivery emphasis on the RDP core house impacted on the profile of delivery. Since the credit-linked subsidy programme had limited success , almost all RDP housing subsidy delivery was targeted at the very bottom end of the scale – i.e. the delivery of the RDP house at a presumed value of approximately R3600 (Rust, 2006). Options for those households earning between R1500-R3500 were essentially ignored and as Rust (2006) points out, all subsidised housing delivery conformed to the national minimum norms and standards: a 30m^2 house, one room with a toilet on a 250m^2 plot of land.

Figure 1: RDP developments have been criticised for being monotonous (www.thenewage.co.za)

Figure 2: RDP development in Alice, Eastern Cape. Poorly located on outskirts and far from economic opportunities (www.thenewage.co.za)

3.3 Housing Sector Performance since 1994

RDP had a profound impact on the profile of delivery. As previously discussed, the failure of the credit-linked system resulted in almost all subsidised housing delivery conforming to the national norms and standards (Cities Alliance, 2011).

At the time when the housing policy was conceived, the South African economy was performing poorly, marked by a long-term decline in the growth rate and a steady increase in structural unemployment (Tomlinson, 2006). As predicted, economic growth increased following the transition to democracy. Between 1996 and 2001 the population grew at 2.1% a year while the number of households increased by 30%; unemployment increased from 16% in 1995 to 30% in 2002 placing greater pressure on household incomes (Republic of South Africa. Department of Housing, 2004). Evidently the initial prediction that the economic growth would improve household's standard of living was misplaced.

While the Housing Subsidy Scheme has led to an overall general improvement in people's lives, with regards to access to secure tenure and basic services, in general the real needs of people have not been adequately met and beneficiaries are highly dissatisfied (Development Action Group, 2009). Issues with the quality of the housing units delivered have also contributed to the dissatisfaction of residents. The location of housing projects, typically on the periphery of towns and cities far from employment opportunities was also called into question. The lack of community participation had been equally troubling (Development Action Group, 2009).

The other criticism levelled at settlements developed under the RDP, which becomes relevant to this research, was that most housing projects were carried out in isolation, not integrated developments with the range of necessary public facilities and amenities (Khan & Thurman, 2001). Several explanations are offered for the mono-functional settlements and the lack of provision of social, educational, commercial and recreational facilities:

- Lack of coordination between and within different state bodies. This ranges between different departments as well as diffident spheres of RSA government ministries
- Insufficient funding for social facilities and
- Inadequacies in the co-ordination of integrated budgeting at national, provincial and local government levels.

As described above, the quantitative success of the RDP were commendable – faced with the post-apartheid crisis the new RSA national government needed to respond in a manner that matched the scale of the problem. However, much of the literature dealing with the performance of the housing sector under RDP have noted that life in the newly established housing settlements was appallingly inconvenient, expensive and unresponsive to the needs of the newly enfranchised citizens (Khan & Thurman, 2001). Some residents expressly aired their views in the form of service delivery protest and as some of the beneficiaries interviewed by Khan et al (2001, p. 34) noted "this is a dump. There are no schools, there are no clinics, there [sic] are no shops. Everything you need you have to travel". In her study of the dynamics between low income housing and location, Biermann (2006) noted that the

average total transport cost for commuters residing in low income housing projects was higher with households spending between 15 -16% of their monthly income on transport. The nationally recommended proportion of household expenditure on transport is 10% (Biermann, 2006). Statistics South Africa affirm this finding indicating that households from the lowest incomes quintile spent a higher proportion of their income on public transport compared to households from the highest income quintile. More than two-thirds of households who fall in the lowest income quintile spent more than 20% of their monthly household income per capita on public transport (66%) (STATS SA, 2015).

Thus, improving access to a range of social and commercial amenities and building habitable environments presented the housing ministry and other departments with a considerable challenge.

3.4 From Housing to Human Settlements: Breaking New Ground

In 2004, the then Department of Housing presented a 10-year progress report on the status of the South African housing and human settlements to the United Nations (UN) Commission for Sustainable Development. This review confirmed most of the findings described in Section 3.3 and concluded that "integration in housing settlements had not been satisfactorily achieved due to misalignment of government funding streams and housing plans; the poor quality of low-income housing during this period and the location of low-income settlements on urban peripheries" ((Department of Housing, 2004) in (Smeddle-Thompson, 2012, p. 15)).

The Department subsequently promulgated a new housing strategy, "Breaking New Ground" (Department of Housing, 2004) which was aimed at directing housing development over the next five years (Ramashamole, 2011). The key expectations of BNG were to "redirect and enhance existing mechanism to move towards more responsive and effective delivery" and to "promote the achievement of a non-racial, integrated society through the development of sustainable housing settlements and quality housing" (Department of Housing, 2004, p. 1).

The rhetoric at the time was focused on the creation of sustainable human settlements and not just housing delivery. President Zuma in his 2009 state-of-the-nation address went on to say that housing delivery is "…not just about building houses. It is also about transforming our residential areas and building communities with closer access to work and social amenities, including sports and recreational facilities" (President JG Zuma, 2009). The RSA Government was attempting to move away from building houses to building communities where social and economic amenities are included (Ndaba, 2009).

BNG entailed a re-assessment of housing delivery processes, it set out seven objectives and detailed the mechanisms with which the Department of Human Settlement indented to use to achieve the following objectives (Department of Housing, 2004)

- Accelerating the delivery of housing as a key strategy for poverty alleviation;
- Utilising provision of housing as a major job creation strategy;
- Ensuring property can be accessed by all as an asset for wealth creation and empowerment;
- Leveraging growth in the economy;
- Combating crime, promoting social cohesion and improving the quality of life for the poor;
- Supporting the function of the entire single residential property market;
- Utilising housing as an instrument for the development of sustainable human settlements in support of urban spatial restructuring.

Khan (2014) points out that the objectives listed above are focused more on enhancing livelihoods through the actual delivery of housing, with housing as the means with which this enhancement is to take place. The BNG policy specifically highlights the following key concepts regarding the formation of sustainable human settlements:

- Progressively eradicating informal settlements;
- Promoting densification and integration;
- Enhancing spatial planning and the location of new projects;
- Supporting urban renewal and inner-city regeneration;
- Developing social and economic infrastructure.

According to the South African Cities Network – State of the Cities Report (2006, p. 6.7), "Over the past decade housing and service delivery interventions for the poor have continued to perpetuate apartheid urban form. This has resulted in the creation of large dormitory settlements of low-cost mass housing on the urban periphery where the price of land is cheap. These areas are typically far from economic opportunity and have limited and expensive transport access. They also tend to reinforce the segregation of the city along racial and income lines. In an attempt to address the ongoing challenge of apartheid urban form, municipalities are placing an increasing emphasis on '*integrated human settlement*' in the approach to housing the poor. These efforts are focused on facilitating denser, better-located, mixed-income, environmentally sustainable government-assisted housing in line with the Breaking New Ground strategy. But there is still considerable work to be done in developing the policy, regulatory and financial instruments required for this approach to be implemented at a meaningful scale".

Integrated sustainable human settlements refer to settlements that include mixed land use, mixed income, mixed tenure and mixed housing typologies. The BNG policy encourages the concept of creating integrated sustainable human settlements and the utilisation of housing as an instrument to support spatial restructuring. Dense and mixed land-use configurations are assumed to encourage high and prolonged activity levels. However, The South African Cities Network Report, (Charlton, et al., 2014) also notes that densification can lead to overcrowding and over-use of available engineering infrastructure and resources.

Ruiter (2009) notes that densification is considered to be paramount to sustainable development. Densification assists with cross-subsidisation of affordable housing units thus making rental and home ownership more affordable. Mammon and Ewing (2005) credit densification as an instrument to mitigate the inefficiencies and fragmentation associated with the provision of single detached RDP housing and the lack of positive public space. Tonkin (2008) note that density is one of the most important indicators and design parameters in the field of housing and human settlement planning and development. Furthermore, it is central to the 'technical and financial assessment of the distribution and consumption of land, infrastructure and public services in residential areas' (Tonkin, 2008).

3.5 Spatial Planning and Housing

One of the aims of BNG was to effect the spatial transformation of the South African urban landscape and to correct the ills of the apartheid planning regime. To effect such change required the repeal of certain apartheid era laws but at the same time created a disconnected and fragmented approach to the implementation of spatial planning legislation.

It was therefore necessary to have a 'uniform, effective and comprehensive 'planning system' (Dept. of Rural Development and Land Reform, 2015) that would 'promote social and economic transformation' (Dept. of Rural Development and Land Reform, 2015). In 2013 the Spatial Planning and Land Use Management Act (SPLUMA) was passed by Parliament with the aim to provide a framework spatial planning and land use management in the Republic (Dept. of Rural Development and Land Reform, 2015). The Act aims to provide direction in terms of new settlement plans and what are considered lawful land uses in South Africa.

This section of the chapter will briefly discuss the traditional approaches to planning and if the objectives of BNG can be achieved through the application of the new legislation.

3.5.1 SPATIAL PLANNING

Spatial planning refers to the methods used largely by the public sector to influence the further distribution of activities in space (European Commission, 1997). It is undertaken with the aims of creating a more rational territorial organisation of land uses and the linkages between them (European Commission, 1997). Another definition of spatial planning describes it as 'a broad and forward-looking concept which aims to take into account different elements of society, including environmental conditions, economic factors and social elements' (Van der Valk, 2002).

During Apartheid the nationalist government made use of master planning to differentiate land use along racial lines (Dewar & Uytenbogaardt, 1991 in Todes, et al., 2010). The main focus of spatial planning was on the definition of land uses and the physical design of spaces through 'town planning schemes' which describe exactly how land should be used and the intensity of said land use (Todes, et al., 2010). Simplified 'guide plans' existed for black areas but it was infrastructure and Group Areas planning that defined the spatial landscape of the time.

The adaption of traditional master planning in South Africa resulted in the formation of a gap between the main urban issues and the extent to which planners and planning systems would be able to respond to these challenges (Watson, 2009). In reaction to both the form and content of South African planning, and influenced by critiques of master planning internationally (Mabin & Smit, 1997; Todes, 2006; Watson, 2002), South African planning in the post-apartheid era tended to 'emphasise strategic spatial planning focused on macro-level urban restructuring' (Todes, et al., 2010). At the same time there was growing awareness and promotion of sustainable development through spatial planning.

Through the introduction of SPLUMA a clearer directive is presented to all three spheres of RSA government in terms of their roles and responsibility towards spatial planning. Each sphere of the RSA government is required to compile their own Spatial Development Framework (SDF). The SDF can be considered as the 'most critical lever to achieve spatial transformation' (South African Cities Network, 2015). Furthermore, 'the various levels of SDFs determine the key elements of the desired spatial structure of the relevant spaces where they apply and provide a long-term vision (South African Cities Network, 2015). In the context of SPLUMA, the SDFs form the link between development principles and implementation and thus are vital to the integration between different sector plans and requirements (South African Cities Network, 2015).

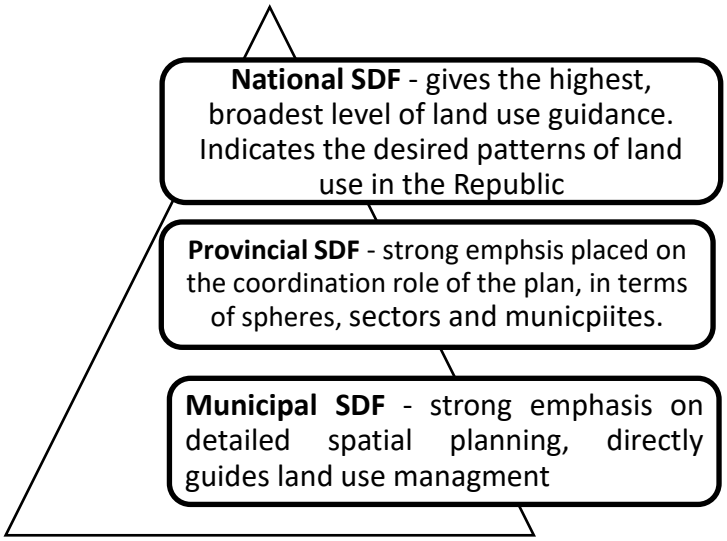

Figure 3: Differentiated roles of the SDFs of different spheres of RSA government (adapted from SACN, 2015).

The SDFs of the different spheres of government must be aligned and consistent with each other, *Figure 3* illustrates this concept. It should be noted that the Municipal SDF is the only framework that deals with detailed spatial planning and land use management and that crucially, with the introduction of SPLUMA the SDFs are no longer just guidelines but legally recognised policy documents (South African Cities Network, 2015).

The Municipal SDFs provide a link between the spatial framework and the management of land uses. The principle of land use management becomes important in the creation of sustainable human settlements as defined in BNG. Denoon-Stevens (2014) notes that 'land use management is one of the key tools required to create sustainable human settlements [and] that land management will block efforts to create sustainable human settlements if implemented poorly, but when implemented wisely can help achieve a more equitable and sustainable urban form'. Land use management can be understood to include the following aspects (South African Cities Network, 2014):

- It is the manner in which land is accessed and acquired;
- The process by which individuals, households and communities continue to have and to hold rights to land;
- The way in which land is regulated; the systems by which land is developed and
- How land is traded.

3.5.2 The Role of SPLUMA in the Development of Sustainable Human Settlements

Planning in itself is an intervention in the property market that sets conditions, limitations and incentives to shape development in order to achieve a better living environment (South African Cities

Network, 2015). In South Africa, the planning and shaping of an urban form is supposed to be driven by the local government – the lowest tier of the government structures but the closest in terms of grassroots implementation. South African local government has a Constitutional mandate to plan within its municipal boundaries and does so through a process of drafting Integrated Developments Plans (IDP) and Spatial Development Frameworks (SDF). Local government is responsible for a range of built environment functions, public transport, planning and housing. This responsibility requires local government to effectively plan, manage and implement strategies and programmes (South African Cities Network, 2015). However, several authors such as (Roux, 2005), (Kanyane, 2006) and (Greyling, 2015) have noted, capacity within local government to execute its mandate is often lacking and it is criticised for its silo approach to local government administration. This fragmented approach to local government planning is one aspect that SPLUMA hopes to readdress by reiterating that land development and land use management is the responsibility of local government.

The Municipal SDF directly guides spatial planning and through SPLUMA, provision in SDFs must be made for the inclusion of 'estimates of the demand for housing units across different socio-economic categories and the planned location and density of future housing developments' (Dept. of Rural Development and Land Reform, 2015) and to 'identify the designated areas where a national or provincial inclusionary housing policy may be applicable'. Where the Housing Code focuses on norms and standards for the development of houses and the SDF needs to go beyond houses to guide the formation of a broader built environment of which housing is a component (cities net ref). This is in line with the objections of BNG which is also a key component of this research – the shift from housing to human settlements – and suggests the SPLUMA is better placed to achieve the objectives of BNG.

The SPLUMA aims to readdress past spatial imbalances and exclusions; including people and areas previously excluded and upgrading informal areas and settlements. The principle of spatial justice is one that features frequently in the Act but as van Wyk, (2015) notes, the question of how its application in practice can 'move beyond the confines of spatial planning and land use management and address the housing issue in South Africa' (van Wyk, 2015) still needs to be answered. SPLUMA is not the first piece of legislation that deals with the transformation of the South African spatial landscape. SPLUMA stems from a long line of legislation, polices, programmes and projects all recognising the inequalities of the past and the influence urbanisation will have on the provision of housing and the quality of life of those living in these spaces. However, at the grassroots level, SPLUMA affords municipalities with the opportunity to address land use management in a manner that regards land use as more than just the assessment of development applications and development control. SPLUMA provides a necessary link between policy and guideline planning and the land use management processes. This echoes the concepts and reforms echoed by Turner and others urging professionals in not only the housing development sector but in the built environment as a whole to consider not just the legislative land use but also the land user and how the use of land will contribute to achieving the objectives of housing policy.

3.6 CONCLUSION

There has been a shift towards a focus on sustainable development and an increased awareness of the relationship between quality of life and the built environment. As the State of the Cities report highlights, implementation of the policy objectives is crucial if the principles of sustainable development are to be achieved. Recent policies related to urban and rural development, including the Development Facilitation Act, 1995 and the White Paper on Spatial Planning and Land Use Management, 2001 and the Spatial Planning and Land Use Management Act (SPLUMA) 2013 have aimed to promote the development of sustainable settlements in South Africa, with a particular emphasis on integration and densification.

Despite the existence of policy and standards, there exists a gap between policy makers and designers of urban infrastructure, and between designers and end-users that has become greater and that urban places have increasingly failed to meet the needs of users, both for themselves and the well-being of their communities and cities ((Lawerence, 2004); (Lawrence & Despres, 2004); (Burton, et al., 2005) in (Landman, et al., 2009). It is apparent that there is no model or universal answer for creating a sustainable African city (Donaldson, 2001). However, the means by which these issues should be overcome are through the spatial interventions recommended by various policies.

BNG has placed explicit focus on the delivery of sustainable human settlements with its stated intention to combat segregation, to overcome poor quality housing and to unlock economic opportunities for poor households (Republic of South Africa. Department of Housing, 2004). However, some analysts still express concern over the lack of consideration for better public spaces as well as the undefined role of designers and urban planners which will ultimately determine how the gap between the layout planning and actual implementation would be bridged (Govender, 2011).

The transition from housing to human settlements is essentially not a transition but a realisation that the building of houses and the development of sustainable human settlements may be at odds with each other: the one is targeted at households (people), whereas the other is all about settlements and neighbourhoods (spaces) and ultimately transforming our urban centres (South African Cities Network, 2014).

The Chapter highlights the need to create sustainable human settlements and the importance of creating quality living environments. The Chapter discusses the shift in policy towards a housing policy framework and legislation that promotes quality urban environments. This information is necessary to achieve the research objective, and highlights some of the difficulties experienced in translating housing policy into action.

CHAPTER 4: THE ROLE OF PUBLIC SPACE IN THE FUNCTIONING OF HUMAN SETTLEMENTS

The increasing rate of urbanisation and the fact that the majority of the population will reside in cities, presents built environment professionals with the challenge of how to provide an urban environment that will provide the residential, social and economic needs of an increasingly diverse population. The provision of universal access to safe, inclusive and accessible green and public space is identified as a vital ingredient of successful cities (SACN, 2016).

Public space has many definitions. They can be defined as those spaces that are open and accessible to the public and include streets, local public markets, parks and public squares (Daniel, 2016). While the CSIR (2000) defines public space as 'almost all land that does not belong to private institutions or individuals' – it goes on further to distinguish between 'soft open space, the unbuilt or green space flowing in almost natural lines through the settlement; hard open space, as accessible and built public space within the built environment; and public facilities' being those. Madanipour (2006), purposes that public spaces are usually 'places outside the boundaries of individual or small-group control' and used for a variety of functions.

Public spaces add to the quality of life people by providing them with substantial social, environmental and economic benefits (Roychowdhury, 2013). Public spaces are where people meet and interact, socialize and are central to the notion of liveable and human environment (Project for public spaces, 2011). Public spaces have been shown to have a significant health benefit, contribute to a community's sense of place, increase feelings of safety and security and allow for the participation in community affairs (Francis, et al., 2012). For the poor, public spaces are of even more importance owing to the fact that private space in low income settlements is limited and more often the residents look to public space to supplement the area required for activities of daily life.

However, as the CSIR (2000) research suggests, public spaces are usually the result of 'space-left-over-after-planning'. Southworth (2002) argues that little or no attention is given to the public environment. She goes on to say that conventional public parks are seen as extravagant and a "nice to have'" and that "Open space is regarded as unaffordable to provide and maintain, and cannot compete for vast popular and political support in the face of demands for basic services" (2002, p. 120) . With this statement Southworth touches on one of the important subjects of this research – the notion that although public spaces have been proven to improve the quality of life of residents, they are often regarded as surplus to the need for housing and basic services and that eventually the 'space left over after planning' is allocated to public spaces with little consideration for the value these spaces have to communities as a whole.

This chapter will aim to understand the role of public spaces in settlements, the benefits and potential of these spaces to contribute to the creation of sustainable human settlements. It will start with a discussion of the various definitions of public space and how public space will be viewed within the context of this research. Thereafter a review of how public spaces are planned and designed in settlements and what becomes of these spaces once they are developed (if at all). Finally the chapter will discuss how these spaces are managed and what monitoring and evaluation, if any, takes place once the settlement is inhabited.

4.1 Defining Public Space

It is first necessary to define exactly what is meant by public space. In their research, Bodnar (2015) notes that the study of public space 'has been at the core of urban studies' and cuts across many disciplines ranging from 'sociology, geography, political science, anthropology to planning, architecture, design and philosophy' (Bodnar, 2015). However, despite the interest in public space the literature on what exactly constitutes public space is 'rather uneven' (Bodnar, 2015).

The concept of 'public' signifies 'of or concerning the people as a whole', 'open to all', accessible to or shared by all members of the community' (Gove 1976; Makins 1998 cited in (Akkar-Ercan, 2010)). The term 'space' has many connotations, but in the context of this study it will be taken to represent a piece of land or property. In their book, Carr et al (1992) echo this statement by defining public space as the common ground where people carry out the functional and ritual activities that bind a community. In this definition public spaces are viewed as 'common' and serve to foster a sense of community.

Public space can also be defined according to who owns the space – both in terms of legal ownership and also the perception of who owns the space (Woolley, 2003). Categories of public, semi-public, semi-private and private open space as suggested by Newman (1972) cited in (Woolley, 2003). According to this categorisation 'private open space includes individual gardens to homes; public open space can be identified as parks and plazas; semi-private open spaces include those where limited number of people use the space but where the ordinary public would generally not be welcomed, for example courtyards to houses; semi-public open spaces might include spaces with limited opening times to the public and generally accessed by particular groups within society' (Woolley, 2003).

The CSIR, in their discussion on planning guidelines, also defines public space firstly as all land that does not belong to private institutions or individuals (CSIR, 2000). It then goes further to categorise hard and soft open space as well as public facilities. Hard open space is defined as 'accessible and built public space within the built environment and can be viewed as either semi-public or public hard open space' (CSIR, 2000). Generic forms of hard open spaces include mixed-mode streets, pedestrian-orientated streets, squares and plazas, markets, parking areas and public transport stops and stations.

Soft open spaces are defined as open, or unbuilt spaces within a settlement with a predominately vegetated or porous surface. Soft open space essentially provides a platform for ecological process to continue and can accommodate a variety of socio-economic community needs. The CSIR also acknowledges public facilities as part of public space; they define public facilities as 'those basic services which cannot be supplied directly to the individual unit within the public environment' and satisfy individual or community needs including those related to 'safety and security, communication, recreation, education, health, public administration, religious, cultural and social' (CSIR, 2000, p. 5.5.1). These facilities are regarded as the responsibility of government – whether national, provincial or local – but can also be provided privately when the government-provided services are perceived to be inadequate (CSIR, 2000, p. 5.5.1). The categorisation of public space into hard, soft and public facilities is provided in Section 4.3.3.

The definitions above provide a broad overview of some of the different interpretations of public space. Common to most definitions is that public space must belong in the public domain and should be accessible to all; it is space that has at times multiple functions, it serves to build a sense of community and provides services to individuals and communities that cannot be provided at a household level.

In the context of this research, drawing on the definitions above, public space is defined as those spaces designated for public use that exist outside of the private dwelling and are accessible to the public. They can either be defined as hard open spaces encompassing both squares and streets as well as soft open spaces such as parks. The research will also include the public facilities and amenities in its definition of public space as these spaces play a valuable role in the provision of basic services to communities and still fulfil the role of improving their quality of life.

4.2 Benefits of Public Space

Improving the quality of life of all residents is at the forefront of the creation of sustainable human settlements – making settlements more liveable within the context of the increasing urbanisation and persistent social and economic inequalities is crucial. While the description of what constitutes a liveable city has been vaguely defined, most authors would agree that liveability is best described and conducted on the 'micro scale of communities and neighbourhoods, as people are the ones who can describe their needs for a better quality of life' (Keleg, et al., 2015). Critical factors, according to Davern et al. (2015), for liveable communities are:

- Residents feeling safe, socially connected and included;
- Environmental sustainability; and

- Access to affordable and diverse housing options linked via public transport, walking and cycling infrastructure to employment, education, local shops, public open space and parks, health and community services, leisure and culture.

These are the essential ingredients for a liveable community. They are needed to promote health and wellbeing in individuals, build communities and support a sustainable society (Davern, et al., 2015).

The factors above note the importance of social connection and access to public space and community services as essential ingredients for a liveable community. Public space has been proven to provide a range of benefits that can be broadly classified in four categories: social, economic, environmental and health benefits. These benefits, however, are only achieved when communities have access to them – unfortunately prevailing trends point to a diminishing public realm and populations having less access to public spaces. This section will aim to explain why public spaces are one of the components of liveable community and why public spaces are an essential part of daily life for people living in urban areas.

4.2.1 Social and Health Benefits

Health and well-being for everyone, regardless of age, gender or income is an essential component of sustainable development (Daniel, 2016) and is one of the Sustainable Development Goals: *SDG 3: Ensure healthy lives and promote well-being for all at all ages.* Public spaces are the main places in communities that support people to be physically active (Daniel, 2016). When people have access to public spaces, in particular parks and green open space, they are more likely to engage in regular physical activity (Elizalde, 2013). There is a multitude of evidence that points to the benefits of regular physical activity – not just the physical benefits but also the mental benefits including reliving symptoms of depression and anxiety (Sherer, 2003; CSIR, 2000) in (Daniel, 2016). Figure *4*

Figure 4 below is an image taken at one of the Outdoor Gyms installed by the Department of City Parks in the Petrus Molefe Eco-Park, located in Soweto, Johannesburg. The project aimed to provide free-to- use exercise facilities to the community to encourage people to make use of public spaces as well as to encourage residents to participate in physical activity (City of Johannesburg, 2012) .

Figure 4: Outdoor Gym located in Petrus Molefe Park, Soweto, City of Johannesburg. (Ngobeni, 2013)

Public spaces provide people with an opportunity to meet and interact socially. For the poor, due to the limited space of their dwelling units, public spaces are often the platform for most of their social engagement. Public paces also serve to create a sense of community and promote a sense of place and identity. According to Francis et al. (2012) a strong sense of community has been associated with improved well-being, increased feelings of safety and security, participation in community affairs and civic responsibility. A well designed public space can also assist in breaking down cultural barriers and allows for interaction of people from different social, economic and historical backgrounds to interact. In a country like South Africa with its strong sense of inherited inequalities, the design and provision of public spaces is important to ensure that this interaction across the historical divide occurs. Todes (2006) cited in (Charlton, 2008)) flags the importance of thinking about 'more than just access to residential land for the poor; rather good public space, access to facilities, and more generally rights to the city are important […] it is important that (these points) are not lost in an emphasis on access to land for the poor'.

4.2.2 Environmental Benefits

Public spaces, and in particular parks, green spaces and open spaces play a role in reducing emissions that contribute to global climate change (Daniel, 2016), they are able to act as bio-filters to clean and return water to the ground (CSIR, 2000) and encourage bio-diversity and conservation of natural environments like wetlands, rivers and remnant patches of indigenous flora (Woolley, 2003; CSIR, 2000).

Public green spaces can be located within a development to incorporate sensitive natural environments, like wetlands, rivers and remnant patches of indigenous flora. In so doing they maintain the diversity of indigenous flora and fauna habitats within a settlement (CSIR, 2000). Integrated

networks of public open space that include watercourses, drainage lines and urban streams not only provide important corridors of open space for recreational purposes but also for the management of stormwater runoff (City of Johannesburg, 2017). Urban development usually increases the area of paved surfaces which in turn reduces stormwater infiltration and results in large volumes of runoff – the overall effect of these changes to the natural water cycle can have significant environmental impacts (Armitage, et al., 2014). An integrated approach to urban water management that includes but is not limited to, the incorporation of public open spaces for use as stormwater attenuation and bio-filtration facilities, is required. These structures are designed to store stormwater for gradual release of that stormwater by infiltration into the soil or existing drainage system (City of Johannesburg, 2017). These facilities can also be designed to remove pollutants in stormwater by filtration through vegetation and the trapping of silt and sediment. Combining the public open space network within a development and stormwater management principles therefore has the dual advantage of flood control and the improvement of water quality through the removal of pollutants (Armitage, et al., 2014) (CSIR, 2000).

Furthermore, public open spaces have the added ecological benefits of noise reduction, improving air quality, local climate regulation and reduction of global warming (Jansson, 2014). Through the planting of trees and shrubs and good design principles, public open space can serve as a buffer to absorb noise as well as a means to filter air pollution and produce oxygen. Public green spaces also contribute to reducing local temperatures – with parks being generally between 1°C and 4°C cooler than the rest of the city ((Wong & Yu, 2005) cited in (Jansson, 2014)). The cooling effect of green spaces leads to reduced energy consumption for heating and air-condition. The impact of global warming has been shown to have severe economic and environmental implications (Daniel, 2016). Not only can green spaces mitigate the effect of increasing local temperatures but vegetation can store carbon dioxide with one tree estimated to reduce carbon dioxide emissions by 18 kilograms per annum ((Akbari, 2002).

4.2.3 Economic Benefits

In addition to the social and environmental benefits, public spaces are also key to the economic development of cities and surrounding neighbourhoods. In their study, Harnik and Welle (Harnik & Welle, 2009) state that although ‘not every aspect of urban spaces can be assigned a definite dollar value – there are quantifiable benefits such as the increase in property value, savings in health care costs, (due to the beneficial aspects of doing physical activities), community cohesion, clean water and clear air that can be clearly identified’.

The informal economy provides a source of income and employment as it comprises of one-half to three-quarters of all non-agricultural employment in developing countries (International Labour Organisation, n.d). Informal traders often make use of public spaces as their places of operation –

streets, markets and transport hubs to sell goods and provide various services (Efroymson, 2015). These traders provide a valuable service to community and also enable themselves to earn an income in the hope of escaping economic poverty. However many times they are the victims of harassment, crime and unsafe working conditions with many traders being forcibly removed because they are in contravention of the by-laws. Mitullah, in Charlton (2008) states: 'the most visible manifestation of informal economic activities is street vending and informal trade […] most of these service providers are in conflict with urban authorities [...] A critical challenge relating to urban informality in Africa is the allocation and use of contested urban spaces' (Mitullah, 2007). Given the important role that the informal sector has to play in local economic development, it is important to ensure that the public spaces in which they operate are used safely and that common understanding of both the traders' needs and the local authorities' requirements are communicated in order for them to work together.

Figure 5 below summarises the benefits of well-designed public spaces. Public spaces should be safe, lively and well-maintained, they bring 'economic value, promote social cohesion and often offer environmental as well as cultural benefits' (Project for public spaces, 2011).

Figure 5: More than just space - quality public spaces hold great benefits for cities. (Project for public spaces, 2011)

4.3 Planning and Design of Public Spaces

As noted by the CSIR (2000), within existing developments, open spaces are usually the result of space-left-over-after-planning. However, given the benefits of public spaces, more attention should be given

to the design and planning of these spaces. This section will briefly outline best practice approach to the design and planning of public spaces.

Breaking New Ground calls for a broader spatial restructuring framework that seeks to align the planning objectives of different RSA government departments in order to develop sustainable human settlements. Subsequent policy revisions like the National Development Plan (NDP) have called for the spatial transformation of cities and neighbourhoods at both the larger city scale and the local level in terms of public space (National Planning Commission, 2011). BNG proposes the construction of social and economic infrastructure, the introduction of a new funding mechanism to fund the development of primary social/community facilities and the need for municipalities to be the primary implementation agencies of these social and economic facilities (Republic of South Africa. Department of Housing, 2004)

This first part of this section will outline the principles and guidelines for settlement planning and how public spaces should be located within these settlements, the second part will broadly outline the guidelines with regards to the provisions of public facilities

4.3.1 Principles and Guidelines for Settlement Planning

The Guidelines for Human Settlement Planning and Design (CSIR, 2000) lists three starting points for achieving positively performing settlements. Firstly, the importance of pedestrian movement, with movement on foot as the fundamental dimension of scale. The majority of the public does not own a private vehicle, however settlements cannot only be pedestrian based. Public transport linkages therefore become important. Secondly, is the importance of thinking spatially. In a pedestrian-scaled environment, the public spatial environment should be viewed as the highest level of social infrastructure. Thirdly, the importance of minimalist approach to settlement-making. Over-design of the process reduces spontaneous settlement-making activities

In the design of settlements, consideration of the external environment surrounding the proposed development is required. People move to settlements to improve their welfare and the grouping of recreational facilities, economic, social and cultural facilities provides such an opportunity. It is therefore important to consider the way in which a settlement is ordered to ensure that it is able to generate opportunities (CSIR Building and Construction Technology, 2000).

The most successful environments in cities are those that have the best integration and interaction with their surrounding communities. Settlements cannot be viewed in isolation – the broader context, the settlements current reality and the planned needs of the residents need to be understood, acknowledged and integrated. The overall process of settlement-making involves the balancing of several resources, namely land, capital, building materials, labour, energy and water. In order to

connect the settlement with its physical environment requires well planned access points that will be fully accessible by pedestrians and drivers.

Ease of access is crucial to convenience and good settlements should be convenient. Related to access are modes of movement: pedestrian and motorised modes. There are two forms of access central to promoting convenience: access to economic, social, cultural and recreational benefits and access to nature (CSIR Building and Construction Technology, 2000). However, the spatial result of over-emphasising vehicular access will be fractured development, with poor links between parts of the development. In order to avoid these poor linkages a connected grid of streets is preferred; this grid of streets provides maximum accessibility to all users, allows for a variety of land parcel sizes, accommodates a variety of residential typologies and sizes and maximises opportunities to market conditions and investors.

The connected grid of streets allows for the ordering of functions and the formation of local districts or neighbourhoods – pedestrian proximity to amenities is crucial and is used to locate all basic daily needs, amenities, transport access and recreation within a five to seven minute walk (Bigen Africa, ADA Urban Design, 2005)

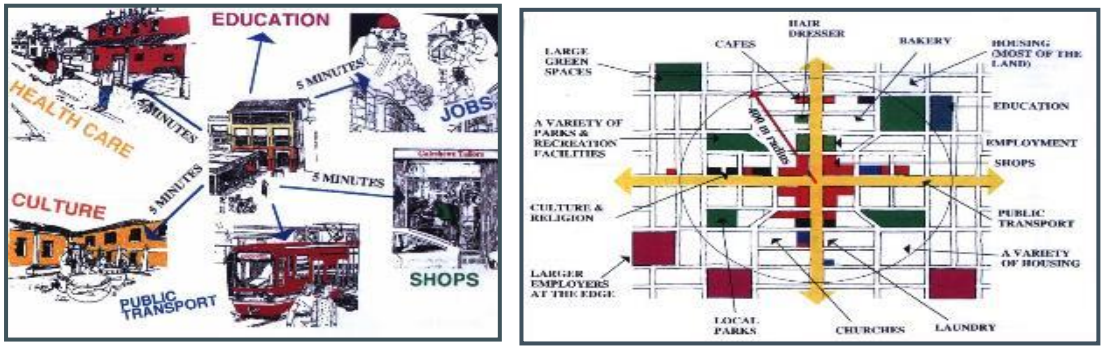

Figure 6: Amenities should be placed within reasonable walking distance Source: Bigen Africa, ADA Urban Design, 2005

Within each local district a public square is used as a focal point, around which a mix of public amenities and buildings are centred. A variety of small parks and recreation facilities are included with larger parks and green areas used to define the edges of each local district. When parts of the settlement are isolated they are reliant on their own internally generated resources, however when parts are integrated they are able to draw on benefits form are larger area. Combining larger activities with smaller activities and using the pulling power of the larger activities allows both of which benefit from the movement flows that result from the presence of the other. A variety of residential typologies are promoted at each local district maximising invest opportunities and addressing the needs of a greater scope of residents.

Figure 7: Clustering of amenities around nodes. Source: Bigen Africa, ADA Urban Design, 2005

Well performing settlements offer their residents a range of multi-faceted choices, namely diversity of place, lifestyle, activities and interaction opportunities. By broadening the residential and commercial variety, it facilitates an increase in choice and opportunities for investors, residents and visitors.

Settlements need to be designed with safety and security elements in mind – the surrounding environment can play a significant role in influencing perceptions of safety and security. Certain environments impart a feeling of safety, while others can induce fear; the planning, design and management of settlement elements can be used to enhance feelings of safety. By promoting mixed land uses and reduction of vacant land, through detailing of urban elements such as the public open space system and by fostering a culture of infrastructure maintenance and law enforcement makes is more difficult and requires more effort for offenders to commit crime.

Quality of place involves an embracing of the uniqueness of an environment, be it natural, topographical or human-made. Site-making actions that use topographical moulding (tree planting) to define areas of recreation; using supplementary sources of energy and building materials; using bodies of water as recreational facilities and creating multiple choices of living condition all contribute to developing a quality of place (CSIR Building and Construction Technology, 2000). Investing in the public realm which constitutes our everyday experience of a place and contributes to giving identity and sense of place, is crucial in the design of a successful settlement. Streets should be designed as a network of public spaces linking well positioned squares and parks. The human-made environment can also be used to create a sense of place-the meeting place of movement nodes is often a place of high accessibility and special significance. Business, commercial activities, schools, clinics, libraries, community halls that need to be exposed to large numbers of people characterise these human-made interventions.

A well performing settlement is one that stimulates the senses (CSIR, 2000). It is both visually appealing and allows for a range of interaction and engagement. The public spatial environment is

crucial to achieving this – especially in lives of the urban poor for whom the full range of a household's needs cannot be adequately met in the individual dwelling (CSIR, 2000). A large part of their lives are played out in the public arena. If properly designed, these places can provide dignity and a sense of permanence to environments. An integrated framework of public spaces will enhance the sensory qualities of settlements.

4.3.2 Principles and Guidelines for the Provision of Public Facilities

In addition to the Guidelines provided for settlement planning, the CSIR also recognised the effect of unequal development patterns on the provision of social facilities. Subsequently the "CSIR Guidelines for the Provision of Social Facilities in South African Settlements" were published in 2012. The guidelines aim to empower planners involved in the provision of social facilities for the planning and prioritisation of social facility investment across towns, cities and provinces (CSIR, 2012).

The spatial planning and strategic forward planning exercises undertaken by municipalities not only have to consider the residential, commercial and transport elements of settlement but also need to allocate and reserve land for particular uses and facilities. As the CSIR guidelines point out, this is especially true of community facilities – including those provided by the public sector and those provided by private developers (CSIR, 2012). Furthermore, 'in respect to planning over the long term, access standards, threshold guidelines and site sizes are increasingly important in ensuring that sufficient land has been reserved for essential facilities in terms of future growth and development without being wasteful and/or encouraging the illegal use of underdeveloped land' (CSIR, 2012).

Noteworthy is that the guidelines recognise that during settlement planning it is important to consider the future housing development mix and the anticipated thresholds in order to plan for community facilities that will be required but at the same time take into consideration the risk that these portions of land may remain underdeveloped at the early stages of a settlements' development.

Throughout this literature review the notion that sustainable human settlements are not standalone housing developments but require a mix of social and economic facilities to create a liveable community have been discussed. The CSIR guidelines further emphasises this point but with the added consideration for the differentiation of social facilities according to varying development densities, community size, mobility levels and socio economic variation (CSIR, 2012). The guidelines are meant to afford metropolitan, district, provincial and national governments the opportunity to make informed investment decisions about the 'number size, type, location and space requirements' of social facilities based on 'technical information rather than political advocacy' (CSIR, 2012).

For the purpose of setting varying standards for the provision of social facilities it is necessary to classify settlements according to their size. This is to ensure a minimum threshold population to

service the facility is present and to ensure that those facilities used frequently by many community members are located closer to the community they service (lower population threshold) than those used more infrequently (CSIR, 2012). Figure 8 below illustrates the classification of the various settlement types. These classifications are further used throughout the guidelines to provide examples of the type of social facilities that should be provided in these settlements.

	HIERARCHY OF SETTLEMENTS	CATCHMENT SIZE (NO. OF PEOPLE)	EXAMPLES OF SETTLEMENT TYPES
A	Metropolitan cities/regions	> 1 000 000	Johannesburg, eThekwini, Cape Town
B	Large cities/small metros	350 000 - 1 000 000	Port Elizabeth, Bloemfontein, Pietermaritzburg, Welkom
C	Large towns/regional service centres	100 000 - 350 000	Nelspruit, Witbank, Krugersdorp, Newcastle, George, Stellenbosch
D	Small to medium towns/regional service centres	60 000 - 100 000	Ermelo, Harrismith, Mossel Bay, Bethlehem, Bronkhorspruit, Grahamstown
E	Small towns/isolated regional service centres	25 000 - 60 000	Mount Fletcher, Delareyville, Beaufort West, Graaff-Reinet, Kokstad
F	Dense dispersed settlements *(Large continuous development with 10+ persons per hectare and up to 10 km² in extent)*	10 000 - 100 000	Ingwavuma, Jozini, Acornhoek
G	Villages	5 000 - 25 000	Merweville, Stella
H	Remote villages *(Villages more than 20 km from larger settlements)*	500 - 5 000	Prieska, Pofadder, Loxton, Keiskammahoek

***NB:** Villages with less than 500 inhabitants have not been formally considered as they are a separate category and would be provided mostly with mobile services on a needs basis.*

Figure 8: Classification of settlement types and catchment sizes (CSIR, 2012)

Figure 9 below outlines the stepwise process for the management of the provision of social facilities. The process requires planners to not only consult the guidelines but also to understand the context of the settlement in which they are working, to consider other relevant resources that will improve the quality, location and scale of the facilities provided.

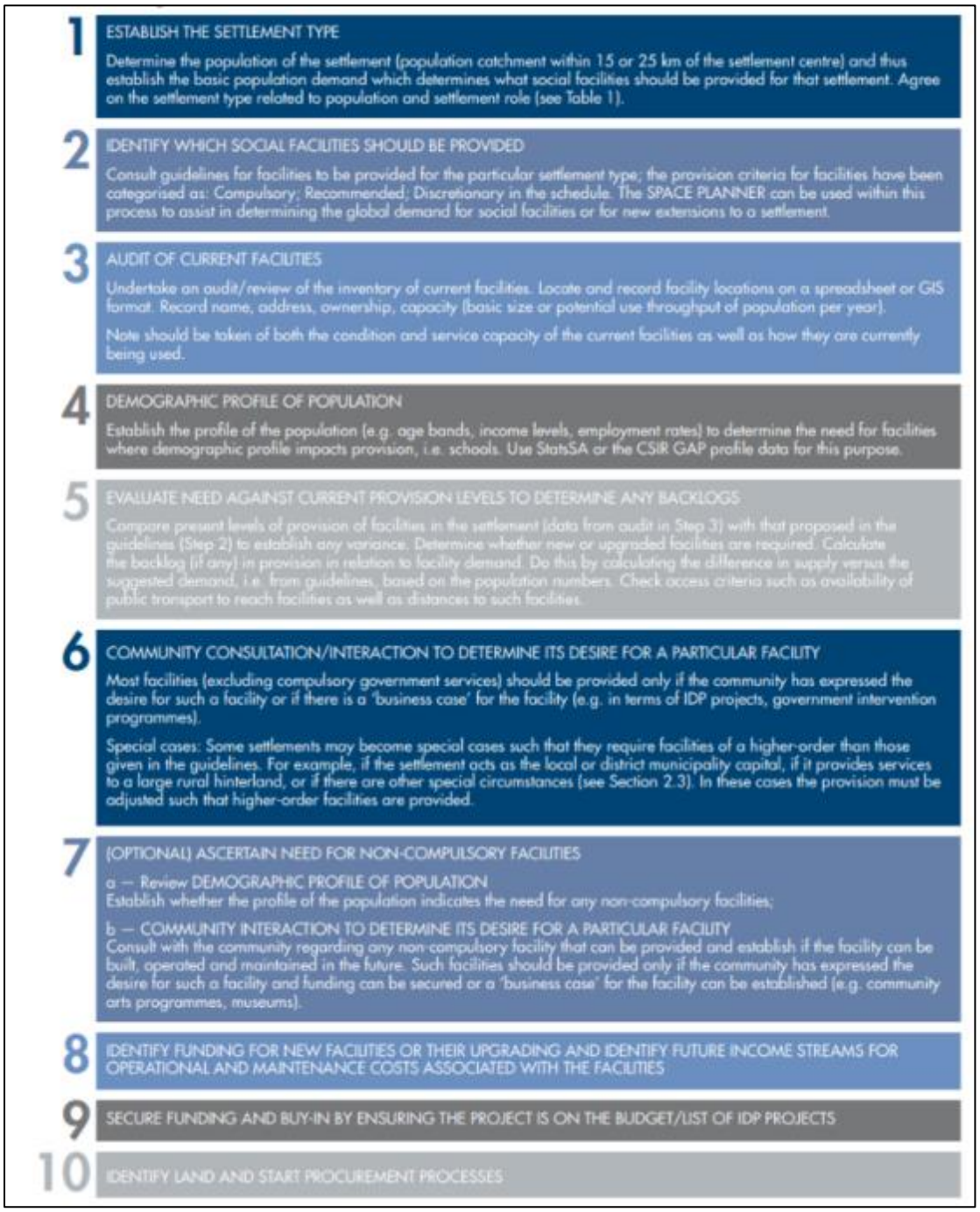

Figure 9: Stepwise process for using the guidelines to identify the supply of social facilities for different settlement types

In summary, the guidelines are applicable to the following planning components (CSIR, 2012) :

- **Forward planning:** providing an equitable basis for allocation of resources for distributing various types of facilities and public spaces
- **Land use management:** standards provide guidance on the type of facilities required and their population threshold provision/capacity/size

- **Plan implementation:** providing a yardstick to measure sufficiency of facilities on a broad scale for under-and over-provision
- **Improving quality of life:** ensuring that a full range of facilities and open spaces are accessible to all communities, thus contributing significantly to improving the quality of life in communities

The guidelines provide a useful tool for planners in the planning of social facilities but are not legally prescriptive or binding. However, if the guidelines are used in the process of spatial planning and land use management to guide the development of SDFs the outcomes of those planning processes, in accordance with SPLUMA will become legally binding. It is therefore crucial that not only planners but the full range of built environment professionals are involved in the application of the relevant housing policy, frameworks and guidelines in order to achieve the creation of sustainable human settlements.

4.3.3 Qualities of Public Spaces

Complex and intricate patterns and relationships exist between various public spaces and facilities (CSIR, 2000). Certain facilities are compatible with each other while some are not – the concept of compatibility will aid in the design of multipurpose facility clusters, which offers a range of services in one location, as well as functional clusters which involves the grouping of facilities which have the common function for example the clustering of educational facilities and playgrounds (CSIR, 2000).

Table 1 and the figures below summarise the quantitative guidelines suggested in the planning of and organisation of public facilities. The table provides a description of how public facilities should be structured in order to achieve the principles of reinforcement, continuity, discontinuity and externalisation highlighted in Section 4.3.1. In so doing, it provides a link between how public facilities and public space should be planned within a settlement.

Table 1: Summary of Qualitative Guidelines for Public Facilities (CSIR, 2000), (CSIR, 2012)

STRUCTURAL PRINCIPLES	**DESCRIPTION**
Principle of Reinforcement	• Public facilities located adjacent to public spaces • Public facilities used to define hard open public spaces and create a sense of definition and enclosure and improve security • Clustering of several public facilities together to create an intensive utilisation by a large number of people

STRUCTURAL PRINCIPLES	DESCRIPTION
Principle of continuity	• Soft open spaces should be linked together throughout settlement system; public facilities can be clustered adjacent to these open spaces • Diverse and continuous network of multifunctional open and flexible movement routes to connect public facilities • Location of public facilities serving a large community along major transport routes
Principle of discontinuity	• Public spaces – both public facilities and open spaces – can be used as mechanisms to create areas of intense activity and tranquil settings and thus add diversity to settlements
Principle of externalisation	• Public facilities should be located on major transport routes for maximum exposure • Clustering and sharing of facilities is more efficient and will encourage investment from the private sector

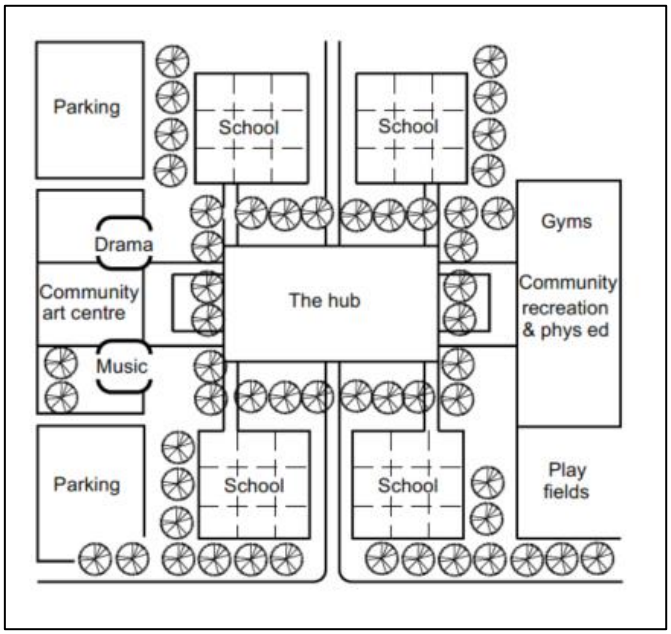

Figure 10: Clustering of functional facilities (CSIR, 2000)

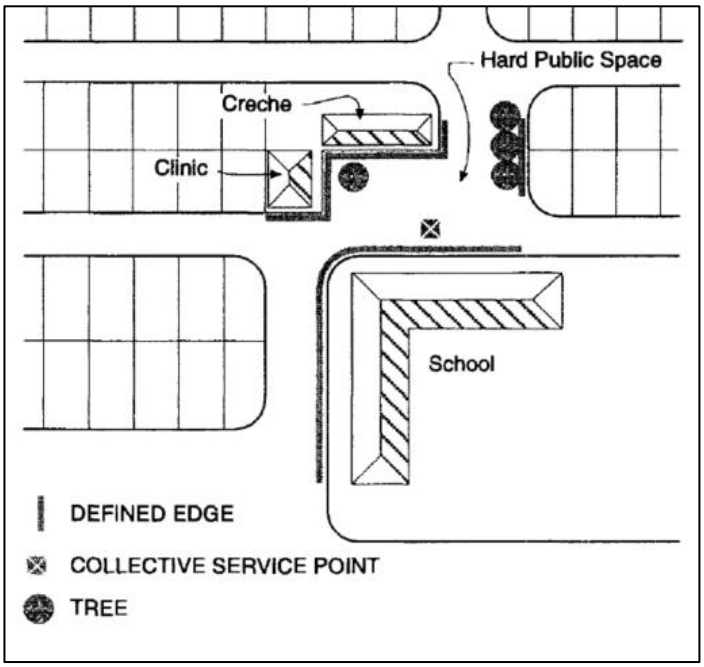

Figure 11: Use of public facilities to define hard open space (Behrens & Watson, 2014)

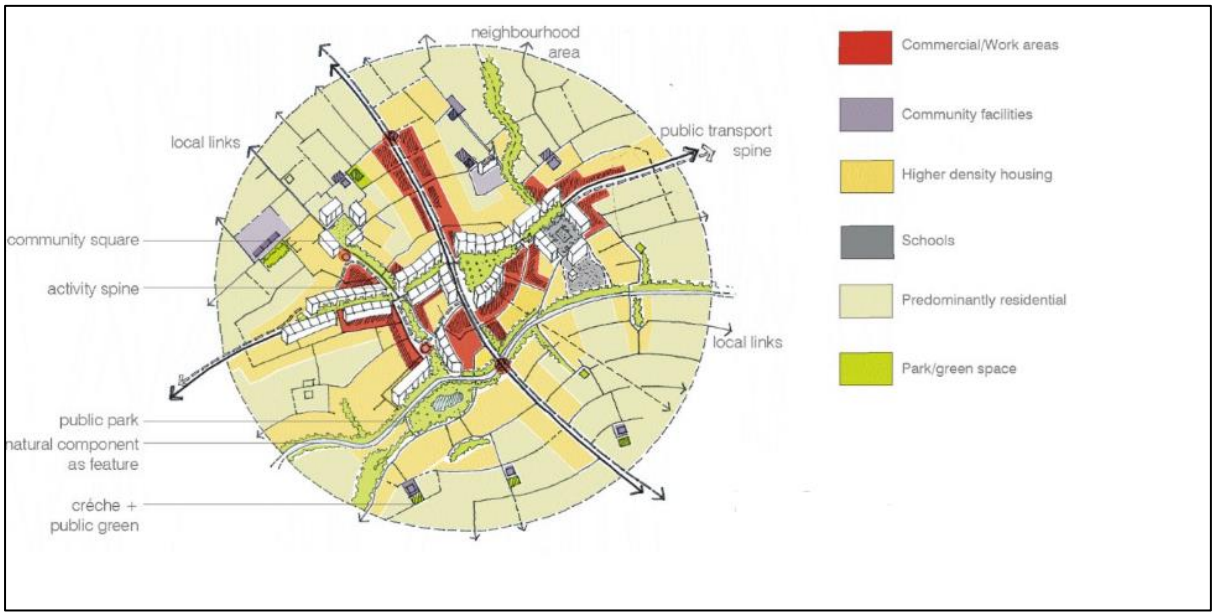

Figure 12: Clustered Nodal Development - incorporation of hard and soft open space and public facilities (Gary White and Associates, 2011)

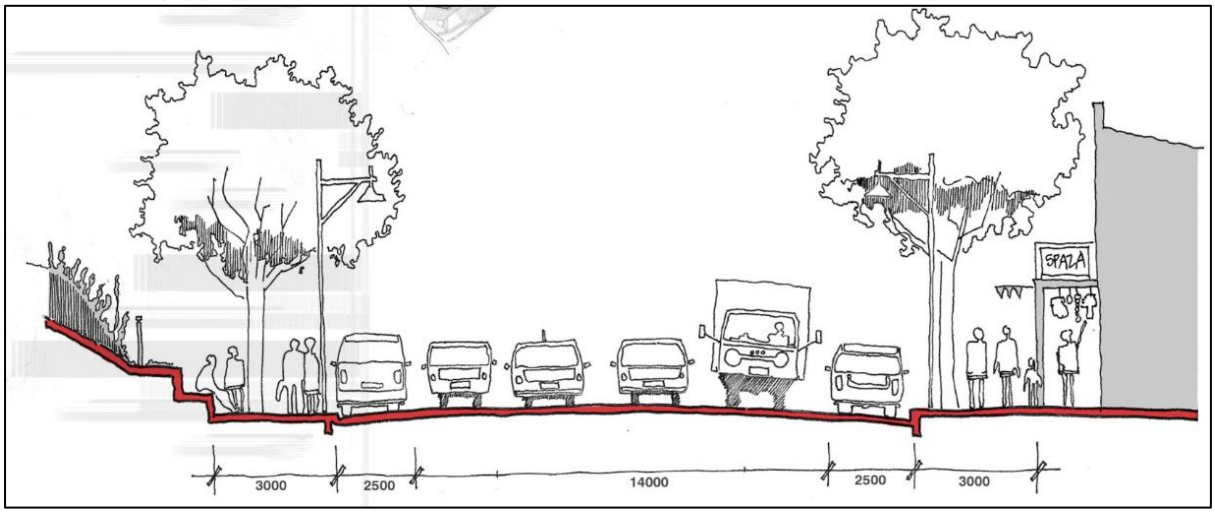

Figure 13: Road Reserves are also part of the public space network - providing space for interaction (Gary White and Associates, 2011)

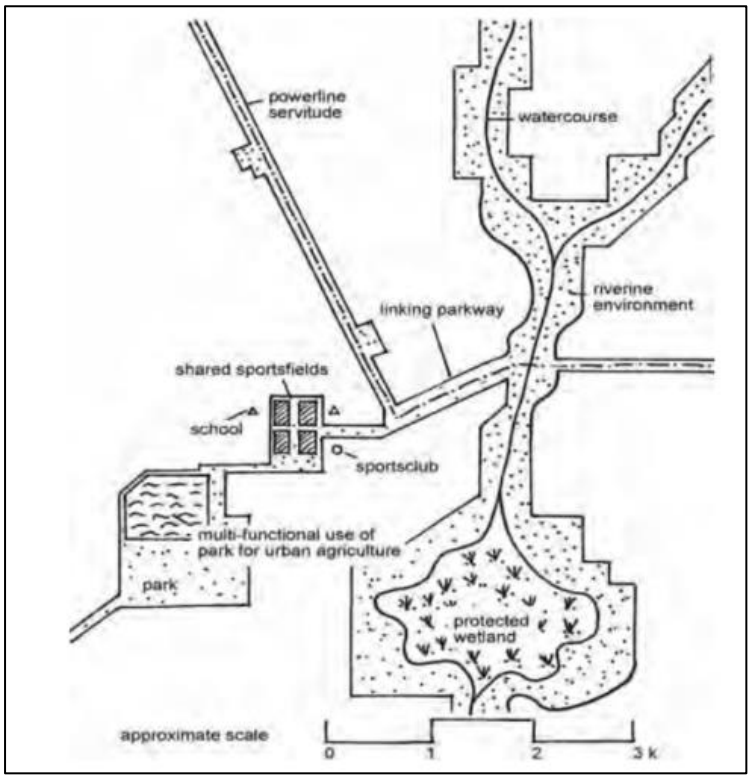

Figure 14: Examples of elements making up soft open spaces can be interlinked (CSIR, 2000)

4.4 Public Space in South Africa

To contextualise public space in South Africa one needs to understand the historical and inherited legacies of apartheid spatial planning. Segregation of whites and non-whites was experienced not only in terms of where these groups of people could reside but also affected the right of all citizens to access quality public spaces. As noted by the Project for Public Spaces, for many black South Africans during apartheid open spaces in townships, informal settlements and inner cities were often frightening places, they note that despite the progressive policies this is often still the case in many settlements (Project for public spaces, 2011).

Public spaces are even more valuable to those most vulnerable in our communities – the poor rely on public spaces to meet their need for recreation and social interaction that is still affordable. Unfortunately the densification and reduction in the size of private space – especially in low-income housing developments make the 'availability and quality of the public space system of utmost importance to the public realm' (CSIR, 2000). The inequality in the provision of public space is further defined along income-levels with developments delivered in the post-apartheid era under the banner of RDP, poorly supplied with green space and accompanying amenities (McConnachie & Shackleton, 2010) (Lategan & Cilliers, 2014).

Southworth (2002) notes that at a time public spaces were 'not even considered as part of the City of Cape Town's menu of public city-building elements' and that the fragmented and unstainable nature of public spaces resulted in a belief that these are 'extravagant, or non-essential, for resource constrained local authorities'. She goes further to say that public space is 'regarded as unaffordable to provide and maintain, and cannot compete for popular and political support in the face of demands for basic services'. When faced with the decision of whether to provide basic services such as housing and municipal engineering services or to provide public space, infrastructure that is perceived to be making a quantitative difference in the housing backlog, especially in the South African political landscape, often trumps the provision of 'left-over' public space.

Alison Brown, (2001) in her study of urban spaces concurs with Southworth and notes that 'urban space in fast growing cities is undervalued by city officials and as a result fails to support the livelihood needs of the urban poor. The lack of recognition of urban space as a critical urban resource and its potential contribution towards improving the quality of life for the urban poor, is a major constraint on the achievement of sustainable development'

As discussed in Section 4.2.3 the economic benefits of public space extend not only to the surrounding areas but crucially in the space of low-income areas, public spaces provide a platform for informal trading and an opportunity for traders to generate an income. However, until recently the need to plan and design spaces for poor communities to participate in commercial activities has been neglected. Often planning regulations are in conflict with the needs of the informal economy and there is usually a tension between the law enforcement officials, local authorities, and the traders themselves. The Warwick Junction initiative in Durban is often hailed as an example where consensus can be reached between the informal traders using public space and the local municipality. The initiative serves to provide a space for informal traders to operate in a space that with relatively minimal infrastructure improvements is safe, healthy and affords traders and the nearly 460 000 commuters passing through the transport hub daily a place to buy and sell and in so doing stimulate the local economy (Charlton, 2008) (Project for Public Spaces, n.d).

Owing to the perceived lack of importance of public spaces, when these spaces are provided especially in low income housing developments, there is often little appreciation of the further layer of public investment needed to transform these developments into sustainable settlements. Despite BNG's recognition that this is indeed a barrier to the creation of sustainable human settlements the problem still persists with many public spaces still remaining underdeveloped long after the residents have moved in (Charlton, 2008). In their research on public space inequality, McConnachie et al. (2010) found that relatively poor suburbs are characterised by up to 14 times less public green space per capita than in more affluent ones. Ovens et al comment that in low income areas 'Once the site is serviced and the house is built, there is no clearly understood further land use enforcement role for the state for poor areas. This is in marked contrast to more affluent areas where government invests

in land that it develops for public spaces and where government is expected to uphold bylaws that underpin quality of life issues and contribute to the regulation of spaces in such a way that mediates conflict between economic, industrial and other competing land uses. It is also this form of government intervention that ensures investment by the private sector, the absence of which is a key driver of enduring poverty in disadvantaged sections of town (sic)' (Ovens, et al., 2007, p. 30) in (Charlton, 2008)

A study into planning of public open space in the previously neglected township of Galeshewe Township in the Northern Cape of South Africa, by Mashalaba (2013) supports Ovens et al (2007) findings. In the Galeshewe study it was found that the majority of the public spaces observed were in poor quality and were underdeveloped. Furthermore the community themselves perceived open spaces as spaces that are awaiting development and did not consider the spaces as contributing to their quality of life.

In their research on the impact of the quality of local green spaces on the health and well-being of people in low income areas, specifically in the City of London the Commission for Architecture and the Built Environment – found that residents in deprived areas have limited access to parks and other green spaces, whilst their counterparts in more prosperous neighbourhoods are better serviced (CABE, 2010).

Figure 15 and Figure 16 below illustrate these sentiments in a local context – the first image depicts well-maintained public playground at the exclusive high-income development of Steyn City located in the north of Johannesburg; this is contrasted with the image at the entrance of Diepsloot, a largely informal settlement located less than 5km north of the Steyn city development.

Figure 15: Well-maintained public space in the exclusive lifestyle estate of Steyn City, Fourways, Johannesburg (www.steyncity.co.za)

Figure 16: Public space at the entrance to Diepsloot (https://www.flickr.com/photos/theimportantproject/2973015819)

Another prevailing trend in the public space landscape in South Africa is the proliferation of gated communities. These can be divided into either enclosed neighbourhoods or new security developments. Gated communities transform urban space form public space to enclosed space where access is restricted and entrance is controlled (Landman, 2012). The development of these

communities is in direct conflict with the post-apartheid policy of spatial transformation and integration of previously marginalised areas with the better performing areas of the city (Landman, 2012). These communities are developed in a response to preventing crime and with the belief that these enclosed developments provide the only option as a means towards a safer living space (Landman, 2012).

The challenge of public spaces in South Africa is how to counteract the opposing paradigms of public space given not only the historical inequalities but also the current view that public spaces are 'nice to haves'. There is clearly a need to plan for what becomes of a space once the settlement has been inhabited – an understanding of how the 'left-over-land' can be transformed into a space that allows its users to benefit from it and also stimulates private sector investment into an area.

4.5 Management of Public Space

One of the aims of this research is to understand what becomes of a public space once a development has been inhabited, not from the point of view of the residents but from those individuals responsible for ensuring the implementation of policy. The critique of many regarding the implementation of policy objectives has been the fragmented structure of many of the RSA Government and Institutional departments tasked with seeing the creation of sustainable human settlements to fruition. As Southworth notes '… from an institutional point of view, are the challenges of addressing long-standing fragmentation in public decision-making, implementation and management. Public space is inherently multi-functional, with overlapping engineering, landscaping, economic and social aspects. […] The consequence of this […] is that public space has not had an institutional home or budget within local government.' (Southworth, 2002, p. 121).

These sentiments are echoed by Landman (2016) citing Carmona (2010) who identifies a number of critiques of contemporary public space – one such critique being the under-management and neglect of public spaces. Carmona references other authors who highlight the decline of public space characterised by litter, graffiti, broken furniture, and the notion that the care of public spaces is 'someone else's problem'.

Neglected spaces, defined as lost space that are in 'need of redesign, [considered as] anti-spaces, making no positive contribution to the surroundings or users' (Tranick, 1986, p. 4). In South Africa, examples of neglected spaces include the underdeveloped open spaces in former township areas which lacked many facilities and quality public spaces (Landman, 2016). While there has been an effort to reclaim these spaces through various urban renewal initiatives some of the over-or under-developed state of these spaces as argued by Landman (2016) remains so dire, many of these spaces remain neglected.

The management of public space requires collaboration with many different public and private institutions – the provision of public facilities is one such example where the importance of this collaboration is highlighted. In the township planning stages provision for public spaces such as schools, clinics and community facilities are usually incorporated as part of the initial layout. The planning for such facilities often lies in other RSA Government departments and if these departments are not made aware of or express a need for such facility in that particular region more often than not the land will remain vacant and undeveloped. It is therefore necessary to undertake a classification and auditing process of existing and required public facilities during the planning stages of a development, as described in Section 4.3.2.

The argument then exists as to what should be the approach to managing the neglected or lost public spaces in existing townships – as noted by Landman earlier (2016), sometimes the state of under-development is so extreme it is difficult to know how to reclaim those spaces. On the other end of the spectrum the subdivision and rezoning of under-developed public space presents planners and local authorities with an additional management challenge. Often these spaces are initially earmarked for public facilities, initially incorporated in the township with the hope of creating an integrated development; when these spaces are left undeveloped there is a temptation to develop more housing units on these portions of land – this is in certain instances in direct conflict with the policy of creating an inclusive and integrated liveable community and the return to monotonous sprawling housing developments is possible.

As observed by Mashalaba (2013, p. 47) 'in most highly urbanising cities, urban planners have to deal with the question of conserving urban open space in areas that need land for housing development for the urban poor. Authorities, due to various reasons that may include political pressure, scarcity of affordable land, inefficient housing policies, may want to densify. The consequence of this approach is that the damage that is done on urban open spaces may be difficult to undo and it is also virtually impossible to replace such open spaces once lost due to the high cost of developed land'

4.6 CONCLUSION

The influence of urbanisation has placed strain on already over capacitated municipal infrastructure, and increased the need for socio-economic facilities and opportunities. There is an ongoing struggle between the provision of basic needs and the provision of these services in a sustainable manner – cities are faced with a threat of land degradation, increasing waste and depletion of easily accessible good quality public spaces. For the poor, and those that find themselves living in low-income housing developments often characterised by monotonous design and poor location in relation to public facilities and economic opportunities, the public realm becomes an important source of space for social interaction, community building and local economic development.

As discussed, public spaces are often regarded as surplus to the provision of essential services despite the evidence that these spaces contribute significantly to the creation of liveable settlements. In South Africa, the deterioration of existing public space and the lack of forward planning for undeveloped public space has resulted in municipalities being forced to close or develop other land uses on these sites (Mashalaba, 2013). This may be due to various other reasons, and it is hoped that as part of this research a better understanding of these reasons can be sought.

Throughout the preceding Chapters the underlying theme has been that the reality on the ground is often very different from the original intentions of government policy and practice. It is then necessary to test this hypothesis, and in the context of this research that means answering the research question, not only by making use of 3 selected case study developments, but through an investigation of the perceptions and reality of built environment professionals tasked with the implementation of policy. This issue will be unpacked in subsequent Chapters.

CHAPTER 5: RESEARCH METHODOLOGY

Research methodology refers to the procedural framework within which the research is conducted (Remenyi, et al., 1998). As Amaratunga et al (2002) comment 'the starting point in research into the built environment is to focus clearly on the fact that the ultimate purpose is to add something of value to the body of accumulated built environment knowledge'.

This chapter outlines the methods used to carry out the research and sets out the reasoning for the choice of research method.

5.1 CASE STUDY METHODOLOGY

Case study methodology is best suited to research that facilitates exploration of a phenomenon within its context using a variety of sources (Baxter & Jack, 2008). This type of research allows for the understanding of complex issues that would be difficult to explore if one was to use strictly quantitative methods (Zainal, 2007). Case study research also provides an opportunity to explain events or conditions and their relationships (Subramoney, 2016).

The most referenced definition of a case study comes from Yin (2003) who defines a case study as 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used'. Using Yin's definition and testing it against this research's objective: this research aims to understand why public spaces are important in the creation of sustainable human settlements and how, if at all, they are being used as they were intended – the phenomenon being public spaces within existing housing developments. A case study approach allowed the researcher to investigate the phenomenon in its exact situation and in so doing allowed the researcher to observe and collect comprehensive data as argued by Rowley (2002) (Shelton, 2016).

Furthermore, Yin (2003) identifies different types of case studies, the type of case study is dependent on the study's overall purpose: describing a case, exploring a case, or comparing a case. Yin uses the terms explanatory, exploratory or descriptive to identify the types of case studies. Explanatory case studies are used if one was seeking to answer a question that sought to explain the causal links in real-life interventions that are too complex for the survey strategies; the explanations would link program implementation with program effects. Exploratory case studies are used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes. While descriptive case studies are used to describe an intervention or phenomenon and real-life context in which it occurred. This research is more aligned to an explanatory case study approach because its aim to explore

whether there is a link between the provision of public space and facilities and the creation of sustainable human settlements as described in housing policy.

A multiple-case study approach was adopted for this research, three examples of integrated housing developments were selected wherein the public spaces could be analysed. Furthermore, to answer the research question, it was necessary to produce results that can be compared. A single case approach would not be applicable because the research has not dealt with the critical case nor one that is completely unique. Multiple-case designs have distinct advantages over single-case designs as information gathered from multiple cases is often considered more robust (Baxter & Jack, 2008). However, Yin (2003) cautions, multiple cases must follow a 'replication' design – each case must be considered so that it either: a) predicts similar results (a literal replication) or b) predicts contrasting results but for anticipatable reasons (a theoretical replication) (Yin, 2003).

As a critique to case studies as a research method, Shuttleworth (2008) argues that the narrow application of a case study means that the results cannot be used to draw conclusions. To compensate for this, this research relied not only on an analysis of case study developments to answer the research question but also other methods including interviews, photographic evidence as well as basic mapping.

The following section will briefly introduce the case study developments and outline the rationale behind the selection and inclusion of each development in this research.

5.2 Case Study Design

Three case studies were selected because they represent a variety of integrated housing developments that have been implemented in the post- Breaking New Ground policy era. The developments are all located within the Gauteng Province and are classified as integrated housing developments. Given time constraints, it was necessary to select case studies that were familiar to the researcher and within her own current field of employment, this was to ensure that access to the necessary information and key stakeholders would not delay the research.

To answer the research question, the case studies needed to comply with certain criteria. The case studies needed to representative of an integrated housing development, with a range of land uses, different housing typologies and forms of ownership. The developments needed to have been implemented after the introduction of the South African National Government's BNG policy and included aspects of the policy in the Development's planning. Thirdly, evidence of public space and non-residential facilities must be present in the development.

5.2.1 OLIEVENHOUTBOSCH, CITY OF TSHWANE.

The development of Olievenhoutbosch was considered as the City of Tshwane's flagship Breaking New Ground Housing Settlement and was one of the first Developments in the City to be implemented in line with the principles and objectives outlined in the Policy. The development plan made provision for a range of land-uses and it recognised the need to include not only a range of housing typologies but also to the importance of public spaces and non-residential facilities in the township layout.

As one of the first developments implemented in line with the new policy, the Olievenhoutbosch case study provided an example of how an established BNG development compares to the initial urban design framework. Given the emphasis on the inclusion of public spaces and non-residential land uses in the planning of the development and the length of time that has passed, the case study provides a good example of whether that which was planned has been used as intended and whether over time, a sustainable human settlement has developed.

5.2.2 THORNTREE VIEW, SOSHANGUVE, CITY OF TSHWANE.

Located in the north of the City of Tshwane, the development of Thorntree View represents another of City's BNG developments. Implemented after the establishment of Olievenhoutbosch, Thorntree View is planned to deliver approximately 30 000 residential units as well as several public facilities with several sites earmarked for schools and commercial development.

The development has however undergone several re-zoning and subdivision applications, with sites formally earmarked for public use being rezoned for residential purposes. This case study therefore provided an example how public space, that has yet to be developed, is being transformed into uses that are perceived to have greater value – by increasing the number of units provided and in so doing attempting to alleviate the housing backlog as well as improving the return on investment for the developer. This case study development was therefore selected for the purpose of comparing what effect a diminishing public realm has had on the objectives of BNG.

5.2.3 RIVERSIDE VIEW, CITY OF JOHANNESBURG.

The development of Riverside View, located on a site between the informal settlement of Diepsloot and the exclusive gated estates of Steyn City and Dainfern, represented an integrated development that serves as an infill development. Aimed at the affordable housing market the settlement offers not only a range of housing ownership options but, unlike the two developments in Tshwane, offers subsidised units in multi-storey apartment blocks.

The development has made provision in its planning for public spaces but to date many of these sites have yet to be developed as planning and construction of the remaining phases is currently underway. Given that the development is still in the implementing stages this is to be expected, however with an anticipated housing yield of 10 000 units and its location in an area that lacks many public spaces and facilities, Riverside View Mega Housing Development is poised to provide much needed affordable housing stock to cater to the gap market as well as subsidised housing to alleviate the housing backlogs. This case study was selected because it represents an example of a development that is being developed nearly 10 years post-BNG. It is hoped that this development will represent a more recent interpretation of BNG in contrast to the other case study developments.

5.3 Qualitative Data Collection Methods

Qualitative data methods were employed as part of this research. Qualitative data methods derive the opinions of experts or participants to allow deductions to be reached concerning the research objectives (Zainal, 2007). Qualitative data has at times been criticised for being too subjective and as having limited duplicity and ultimately difficult to replicate and verify (Dwyer & Limb, 2001).

Primary and secondary sources were used to derive the data. Primary data was obtained from structured questionnaires and informal interviews with housing practitioners involved in the development of the case study settlements. Primary data was important to the study as it allowed the researcher to gather first hand-information from those persons directly involved with the case study settlements. Site visits were also conducted to gather evidence of what exists in reality, site visits further added to the validity of the research by supporting the data gathered from interviews.

Secondary data was obtained from literature, project specific documents and policy documents. Some of the case studies selected were known to the researcher and she has personal experience working on some of the projects as she is employed by the Consulting Civil Engineers responsible for executing parts of the scope of works.

5.3.1 Interviews

To reinforce the information collected from an analysis of the case study developments it was necessary to conduct interviews with professionals with experience in the case study developments as well in the related fields of town planning and urban development management.

The objectives of the interviews was to understand how professionals understand the objectives of housing policy as described in Breaking New Ground as well as their definition of public spaces in the context of integrated housing developments. It was necessary to understand whether professionals considered the inclusion of public spaces within integrated housing developments as important and if

these spaces contribute to the creation of a quality environment. Furthermore the issue of the planned versus the lived reality was questioned as it was important to determine whether professionals, from their experience, thought that public spaces are being used as intended.

One of the limitations of qualitative research is that it difficult to gather information from various sources because the focus sometimes is on the wrong role players (Khan, 2014). For this research, given the boundaries of the case studies it was necessary to make use of purposive sampling techniques which allowed for the selection of specified individuals who the researcher believed will provide an accurate and relevant contribution to the research data (Subramoney, 2016).

A purposive sampling technique is widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources (Patton, 2002) cited in (Palinkas, et al., 2015). Purposive sampling is a form of non-probability sampling based upon a variety of measures which may include specialist knowledge of the research issue, or capacity and willingness to participate in the research (Palinkas, et al., 2015), (Subramoney, 2016), (Oliver, 2006).

For this research, the researchers own knowledge of the actors and role players involved in the case study settlements was the starting point in determining potential interviewees. The researcher instinctively selected the number of interviews to be conducted to adequately answer the research question. The number of interviews selected followed a principle of data saturation described by Marshall, et al (2013). Data saturation refers to 'the amount of data that is received at a positive rate' (Shelton, 2016) and follows that when the results start to become repetitive, the data is said to be saturated. Interviewees were sourced from the local authority officials involved in Development Planning and Urban Management, Private Developers, Town Planners, Urban designers, Engineers and Development and Project Managers.

Interviews followed a semi-structured format. A scripted list of questions was prepared prior to the interview – these served as a guideline and interviewees were free to express any views outside of the structured questions. Restrictions were not placed on the interviewee instead they were made aware that they were free to express their own worldviews. The list of interview questions is included in Appendix A.

In total the interview sample included a total of seven (7) professionals including 3 town planners with qualifications ranging from Bachelor's degrees to Doctorates; one representative with a background in town planning and working with private developers; one representative with a civil engineering background with experience as a development and project manager; one representative with a background in architecture and urban design and finally one representative with a town planning background working in Local Government within the Strategic and Investment Planning Department

of the City of Tshwane. The respondents selected, their field of expertise and current field of employment as well as the motivation for their inclusion in the study are indicated in Table 2 below. As the purpose of this research was to understand the context of how public space is planned and implemented within integrated housing developments from the view point of the housing professionals, the data gathered did not include the opinions of residents and the users of these spaces. The exclusion of residents from the study helped to define the boundaries of the research and in so doing helped to provide focus for the study.

Table 2: Respondents selected as part of the research sample

Name	Field of employment	Motivation
Respondent A	Town Planner, private practice	Experience with planning and implementing large scale housing development. Involved in the Thorntree View Development
Respondent B	Town Planner & Project Manager, private practice	Experience in town planning as well as community liaison. Involved in the Thorntree View Development
Respondent C	Senior Urban Designer, private practice	Urban Designer involved in the Olievenhoutbosch Development
Respondent D	Strategic Planning and Capital Investments, Local Government	Representative from Local Government responsible for Strategic Planning within the Municipality and Capital Infrastructure Investment.
Respondent E	Development and Project Manager, Consulting Engineers, private practice	Civil Engineer with background in Development Management of large scale integrated housing developments

Name	Field of employment	Motivation
Respondent F	Senior Urban Designer, private practice	Experience in urban design from academic (lecturing) and in private practice
Respondent G	Town Planner & Project Manager, private developer	Private Developer

5.3.2 PHOTOGRAPHY

Photography offers a visual and observational record of what exists in reality. Photographs were taken during site visits to the case study developments and were used to provide insight into how public spaces are used. Photography is often used as a data collection method in qualitative research in the fields of social sciences and social anthropology (Schwartz, 1989).

During the site visits photographs and field notes were recorded observing the public spaces in terms of quality of the spaces and how these spaces were used. Field notes also recorded elements of the settlements that required further clarification during the interview process.

5.3.3 MAPPING

Cadastral maps were used to locate the case study developments in the broader context of their surroundings. Land-use maps, which indicate the prescribed land-uses – either residential, educational, institutional or open space – throughout each case study development were also used as a source of data.

These maps were used to identify where public spaces and facilities were planned for in the case study developments. In particular, record was made of where public spaces were allocated on the map, what the planned land-use for these portions was and whether on site the planned land-use had been realised.

5.4 DATA ANALYSIS

Due to the primary sources of data being interviews, the primary method that will be used for data analysis will be qualitative content analysis concerned with identifying common themes and trends as

suggested by Amarantunga, et al., 2002. The research questions and sub questions were used to analyse the data. Case study patterns were studied and compared to determine whether or not they are in line with stated propositions and expected patterns (Yin, 2003).

5.5 LIMITATIONS

The process of data collection was a time consuming one. The case study developments are spread throughout the Gauteng province and cover a large area. It was therefore not possible to visit each and every portion of the settlements identified for public use. The time of day selected for the site visits also influenced how public spaces were being utilised; it was not always possible to conduct multiple site visits at different times of the day due to time constraints and limited resources.

The study was limited to cases that the researcher had relatively easy access to information. Owing to time constraints and the management of the schedules of several key informants meant that certain cases were excluded from this research. The issue of the researcher being involved in some elements of the case study developments was also considered as a possible limitation. The researcher is employed by the Consulting Engineering Firm responsible for the Civil Engineering and Project Management aspects of the three case study developments and has experience working on two of the case study developments. Insider research has been critiqued as being subjective and shaped by the perceptions of the researcher.

The study did not include the opinions of the residents and how they experience public space in the case study settlements. As the aim of the study was to consider the translation of policy into implementation, it was decided to exclude the opinions of residents. The safety of the researcher in some of the settlements was considered and in some instances it was necessary to liaise with other personnel to accompany the researcher to the sites. It was also not always possible to photograph certain elements.

While, the research had intended to include a balance of respondents from the private and public sectors. Attempts were made to include more respondents for the public sector. The limited inclusion of the public sector professionals means that the research may be more aligned to the views of the private sector than that of the public sector which was not the intention of the researcher.

5.6 ETHICAL CONSIDERATIONS

Ethics pertains to doing good and avoiding harm. Harm can be prevented or reduced through the application of appropriate ethical principles (Orb & Eisenhauer, 2000). Bulmer (2001) notes that the, consideration of ethics needs to be a critical part of the substructure of the research process from inception to interpretation and publishing of the research findings.

There are several common ethical principles that need to be taken into account when embarking on a research study. Khan (2006) identifies: a) informed and voluntary consent; b) confidentiality of information shared; c) anonymity of research participants; d) beneficence or no harm to participants and e) reciprocity. These elements as they pertain to this research will be discussed below.

Informed consent was obtained from participants before any information was gathered. As detailed in Appendix B, the questionnaire incorporated a section where participants were required to sign that they consent to being interviewed. Informed consent adheres to a larger issue of respect to the participants so that they are not coerced into participation and have access to relevant information prior to the consent (Khan, 2006).

The following ethical considerations were upheld during the course of the research, these were implemented to ensure that no harm can come to those choosing to participate:

a) Participants were informed at the start of the interview that they were under no obligation to participate – an informed consent was read to each participant before the interview commenced.;
b) Participants were allowed to withdraw from the interviews at any time;
c) It was made clear to the participants that even though the researcher is an employee of the Consulting Engineering Firm involved in the implementation the projects, she does not represent the interests of her employer and data collected was for research purposes only;
d) Subsequently, the researcher made no promises to address any issues raised by the participants in regard to the implementation of the project;
e) All information supplied by participants was treated as strictly confidential and anonymous.

5.7 CONCLUSION

This Chapter outlined the proposed research methodology. The reasons for the selection of the preferred research methodology as well as the methods of collecting data were discussed. This study made use of a qualitative research approach with case studies, interviews, photographs and maps used to collect data. Figure 17 below summarises the research methods used in the study.

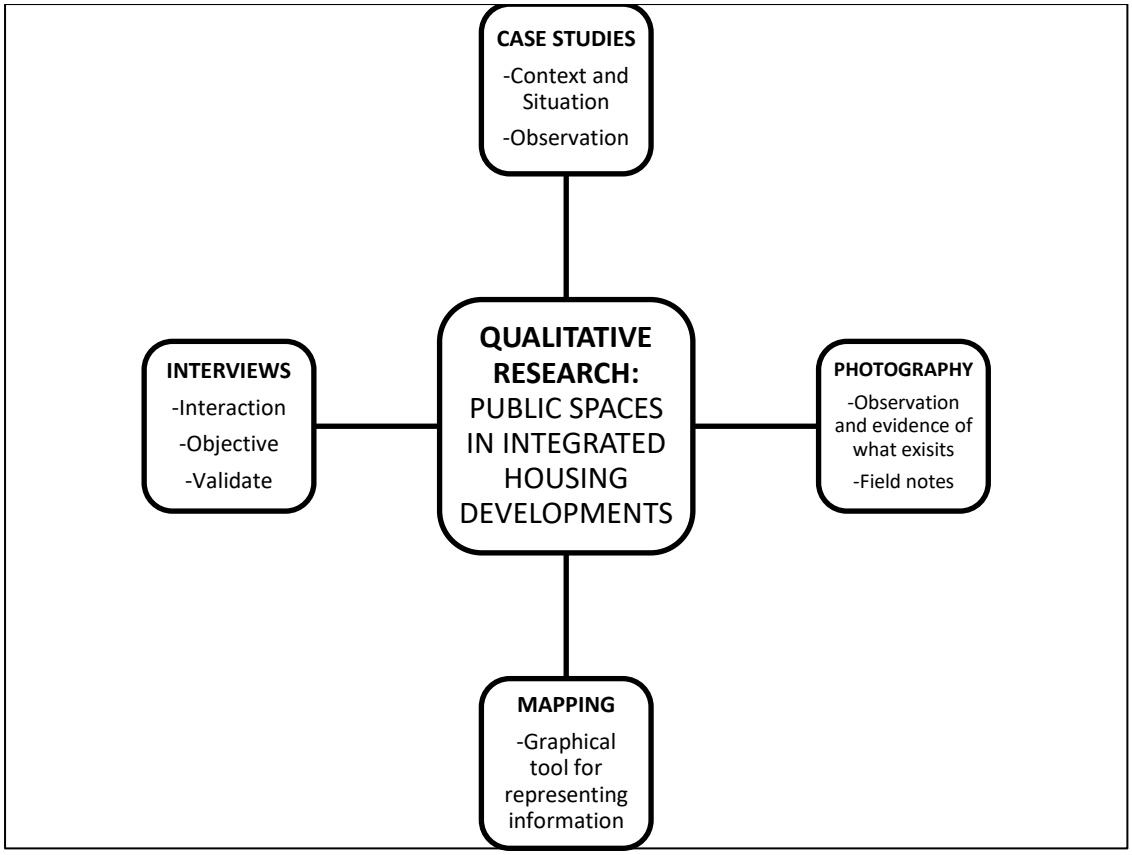

Figure 17: Summary of research methods applied to this study. Adapted from Shelton, 2016

CHAPTER 6: CASE STUDY DEVELOPMENTS: PLANNING AND IMPLEMENTATION

This chapter will outline the three case study settlements originally introduced in the previous chapter. The case studies will be described by firstly giving a brief background to the development, its objectives and scope; followed by an overview of the spatial context in relation to the regional spatial development frameworks; the guiding policy framework and urban design principles will then be described and thereafter key references to public space planning will be identified. Thereafter, each case study will conclude with the photographic analysis of the public spaces in each of the case study settlements have manifested. Figure 18 below illustrates the location of the case study projects in relation to each other.

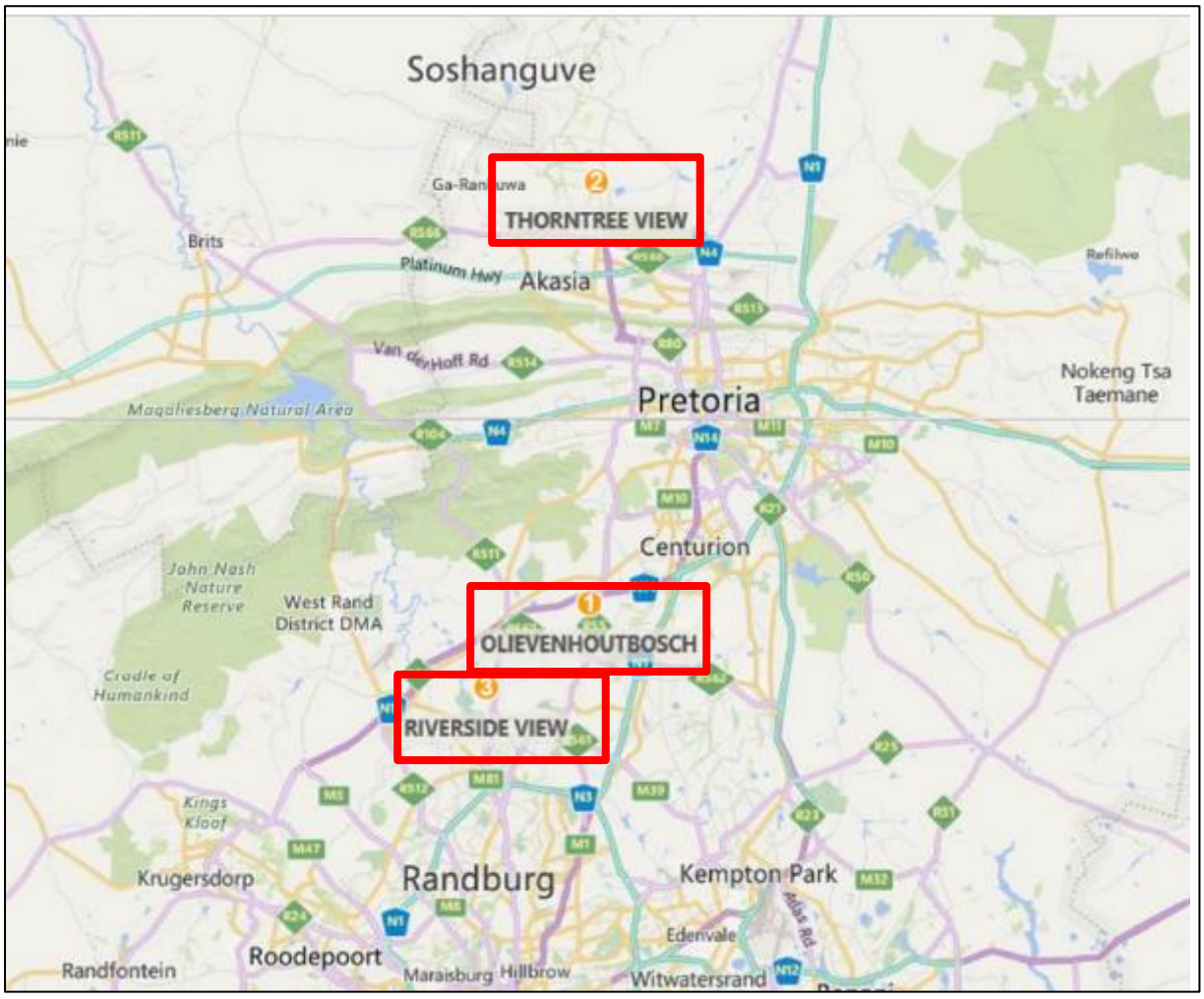

Figure 18: Location of case study projects. Map source: (Bing, 2017)

6.1 THORNTREE VIEW, SOSHANGUVE

The Thorntree View integrated human settlement, which is acknowledged as the largest integrated development within the greater Tshwane metropole, falls within a development node recently declared as a priority by the Tshwane Mayor as well as the Minister of Human Settlements.

According to the Urban Design Framework: "Thorntree View bridges the inherent fragmentation of the surrounding townships of Rosslyn and Soshanguve, by integrating these neighbourhoods and, in effect, creates economic, social and service linkages. Consequently, Thorntree View gives rise to a unique expression that integrates and complements the surrounding areas and greatly enhances the functionality and ambiance of the environment in and around the development" (Gary White and Associates, 2011)

The Urban Design Framework also states that "prospective residents are offered a choice of over 30,000 subsidised, bonded and social housing opportunities, which blend into the public open spaces, business and commercial prospects, as well as the schools, sports fields, parks and other public amenities. This development is an embodiment of 'Breaking New Ground' principles at work and provides a platform for cross subsidisation ensuring that this integrated human settlement is economically and fiscally viable" (Gary White and Associates, 2011) .

Thorntree View caters for 24 primary schools, 12 secondary schools, 35 business stands, 176 hectares of public open spaces and parks and 133 institutional sites which, among others, will be used as clinics, churches and crèches, as well as community facilities (Valumax, 2017).

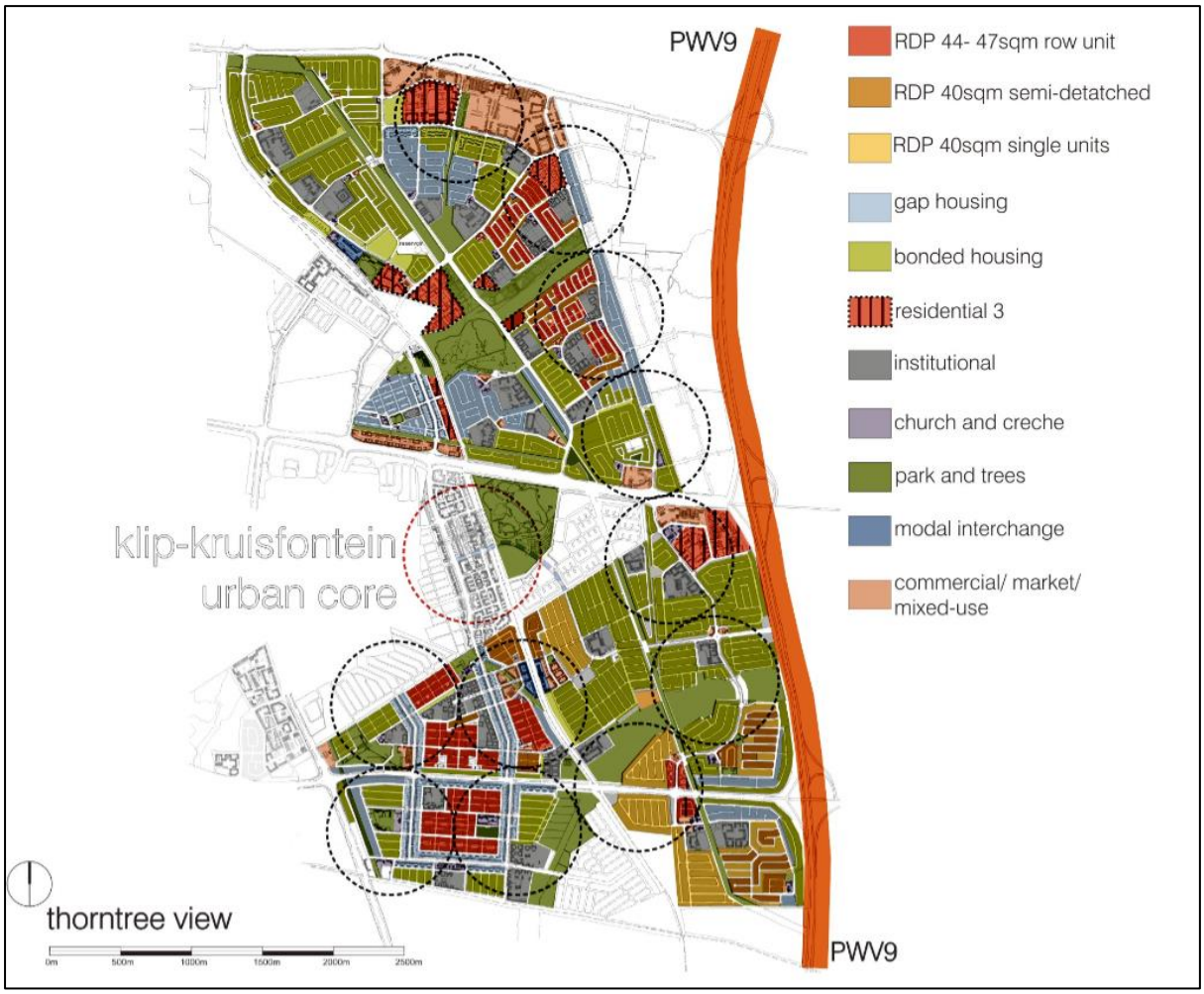

Figure 19: Thorntree View Land Use Plan

6.1.1 Location and Surrounds

The development of Thorntree view is located in the Township of Soshanguve which falls within Region 1 of the City of Tshwane. An estimated 58% of the dwellings in this region fall within the low-income category. 29% of the Region's population live in informal settlements and in general have low-income levels with 16% of the population earning a monthly income of less than R1 600.00 (City of Tshwane, 2013).

The name is an acronym **So**-Sotho **Sha**-Shangaan **Ngu**-Nguni **Ve**-Venda. The acronym divided the Soshanguve residents according to their tribe when they were resettled from Mamelodi and Atteridgeville in 1974. While this was to make administration of the settlement easier for the apartheid government, it left a community divided and suspicious of each other (Mahlatjie, 2016).

Soshanguve, previously designated to migrant workers, has become a city in itself, housing a large portion of the total population of Pretoria.

The map below (Figure 20) locates the Thorntree View Development in the surrounding environment.

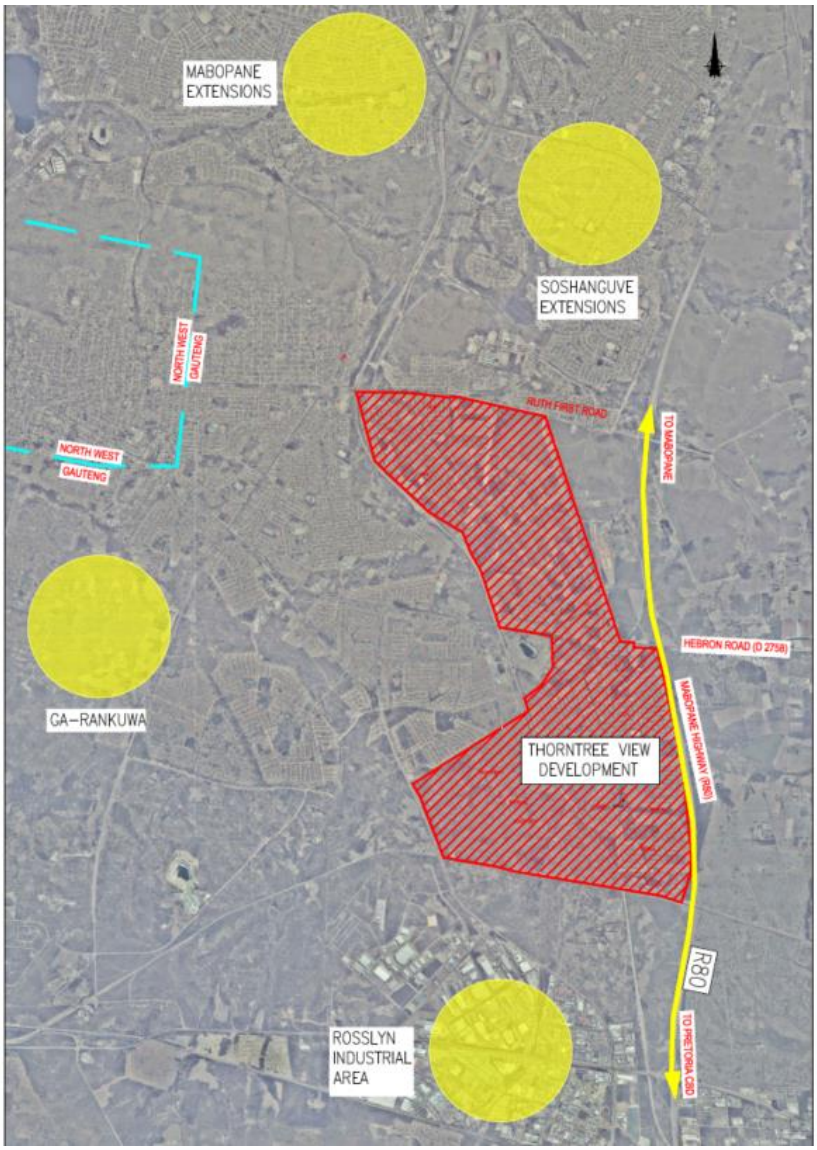

Figure 20: Locating Thorntree View in the Greater Tshwane Region (GWA, 2011)

The Thorntree View Development (TVD) is located within the North-Western Development Corridor which stretches from Pretoria North, via Akasia, Rosslyn, Soshanguve to Mabopane Core. The development is in line with the RSDF objectives of densification along activity spines as indicated in Figure 21.

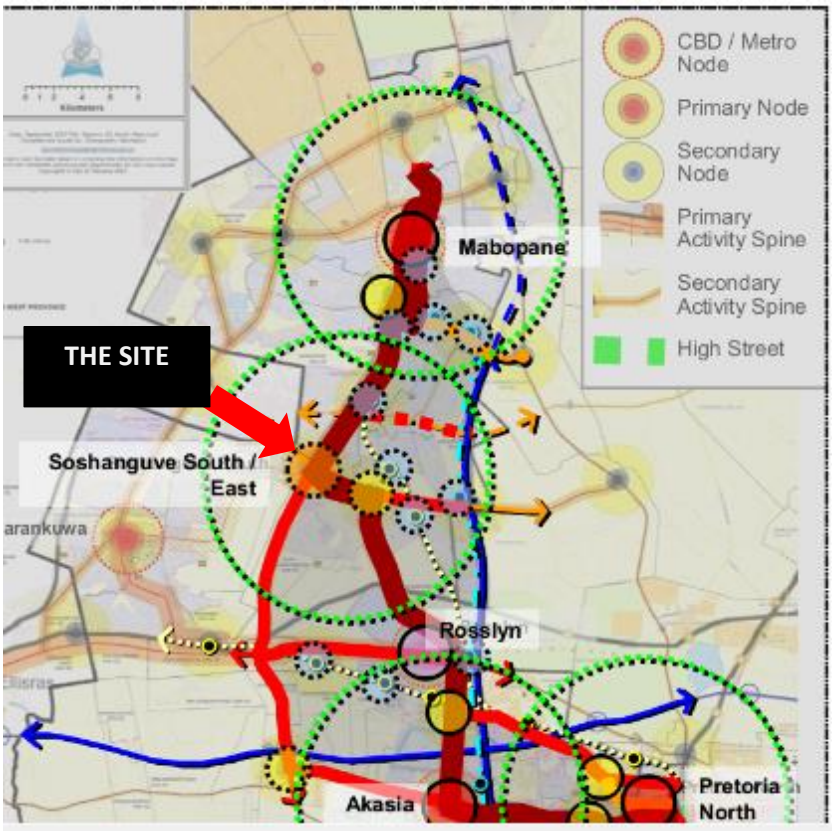

Figure 21: Primary & Secondary Activity Spines, (City of Tshwane, 2013)

6.1.2 PROJECT OBJECTIVES

Due to the magnitude of the project, essentially creating and establishing an entire new community, the aim was to service this community with a comprehensive township development approach, including the development of sustainable social, business and commercial amenities. In addition to this, the balanced mixing of all income groups should be addressed in the various land uses between fully subsidised and fully financed housing products throughout the project.

According to GWA (Gary White and Associates, 2011) in an attempt to alleviate the housing backlog and in order to deliver within the shortest time possible, the professional team elected to adapt the existing approved layout. The already approved township layout had to be densified and realigned in terms of Breaking New Ground principles so that it met the needs of an integrated community.

Notably the Project's objectives highlight that the establishment of schools, crèches, shopping convenience centres, medical practices, filling stations, parks, play-grounds etc. are to follow the pace of the residential occupation rate.

6.1.3 URBAN DESIGN PRINCIPLES

According to the Urban Design Framework, TVD is based on the Breaking New Ground policy and specifically aims to achieve the objectives of densification and integration; community life; enhanced housing design and the development of social and economic infrastructure.

As indicated by the developer, (Valumax, 2017), Thorntree View represents a medium density development with a range of housing types and tenure alternatives including fully subsidised housing in the form of single/semi-detached row houses; gap housing (partly subsidised) in the form of single/semi-detached houses; bonded housing in the form of single residential houses and residential 3 units (rental/social housing, walk-up 3-4 storey buildings). To date, predominately single and semi-detached residential units have been constructed.

The development's urban design framework highlights the following points as important to the creation of a vibrant and successful settlement:

a) Public spaces and streets should be well-defined, creating pedestrian-friendly places. Important pedestrian routes and areas should be planted with trees to provide shade. For reason of safety and security, public areas should have overlooking windows, allowing passive surveillance.
b) Buildings must respond positively to places and streets, hence they should not turn their back to them and should help define the edge of urban spaces. Transition spaces between the public street and private building need to be provided.
c) Street layouts should provide for safe and convenient pedestrian access and should be shorter to facilitate pedestrian access. There should be a network of streets, parks, squares and playgrounds linking residential areas together. The street patterns and designs should not be determined by vehicle requirements alone.
d) Residential areas should have a range of housing types that are situated within walking distance from clustered local community and public transport facilities.
e) Higher densities are required to promote and sustain public transport. A minimum gross density of 40 dwelling units per hectare is required to support a sustainable public transport system.

6.1.4 PLANNING FOR PUBLIC SPACES IN THORNTREE VIEW

From the urban design perspective, public spaces in TVD have been incorporated into settlement plan as a whole. Recognising the importance of utilising public space the urban design framework states that "a variety of urban spaces have been created within the precinct to cater for various needs of

community life, ranging from urban squares and small parks to pay-lots. These are distributed throughout the area".

According to the Thorntree View Development framework, special places are earmarked for the grouping of public amenities that include schools, community facilities, public open spaces and commercial sites. The initial land use plan, highlighting the sites dedicated for non-residential uses, is illustrated in Figure 19 .

The township layout (Figure 23) indicates the large number of sites that were set aside for educational facilities – in total 26 school sites were identified, this is in addition to the 3 existing schools in the area. Commercial sites also feature in the development, a total of 5 are identified – these sites are predominately located along main access roads. Scattered through the development are sites zoned for "community" or "religious" purposes as well as several larger sites zones as "special" or "institutional". Uses permitted on special sites include shops, offices, business buildings and retail industry. Finally, the site is bisected by the Kaalplaasspruit and various tributaries which create a network of green space and sites zoned as "public open space" and "parks".

Figure 22: Aerial Views of Thorntree View Development (Valumax, 2017)

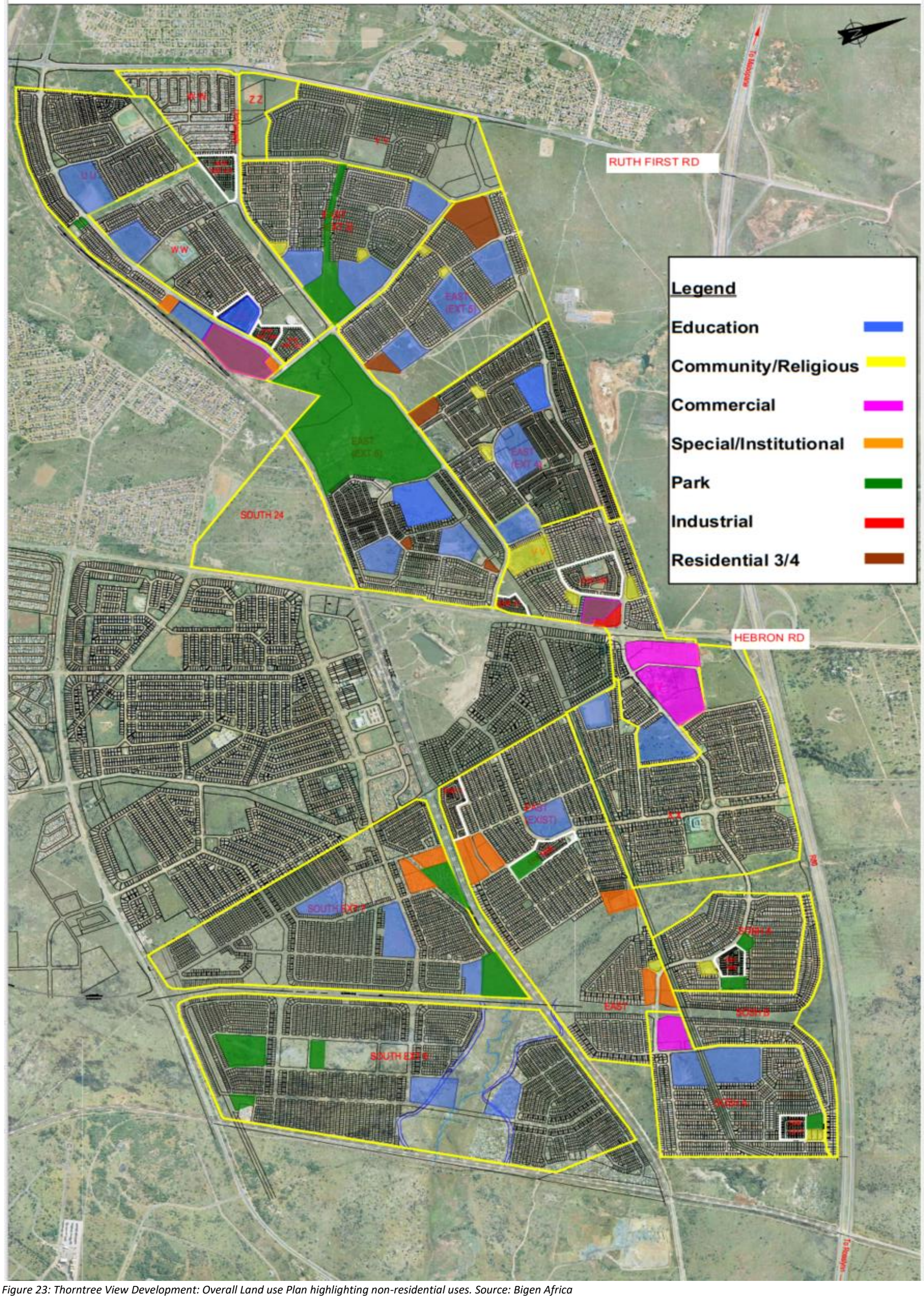

Figure 23: Thorntree View Development: Overall Land use Plan highlighting non-residential uses. Source: Bigen Africa

6.1.5 Evidence of Public Spaces in Thorntree View

The following section will present a photographic analysis of the public spaces in the Thorntree development. The township of Soshanguve was established under the previous apartheid dispensation and as such already had an established community. A site visits was conducted over a weekend in October 2017.

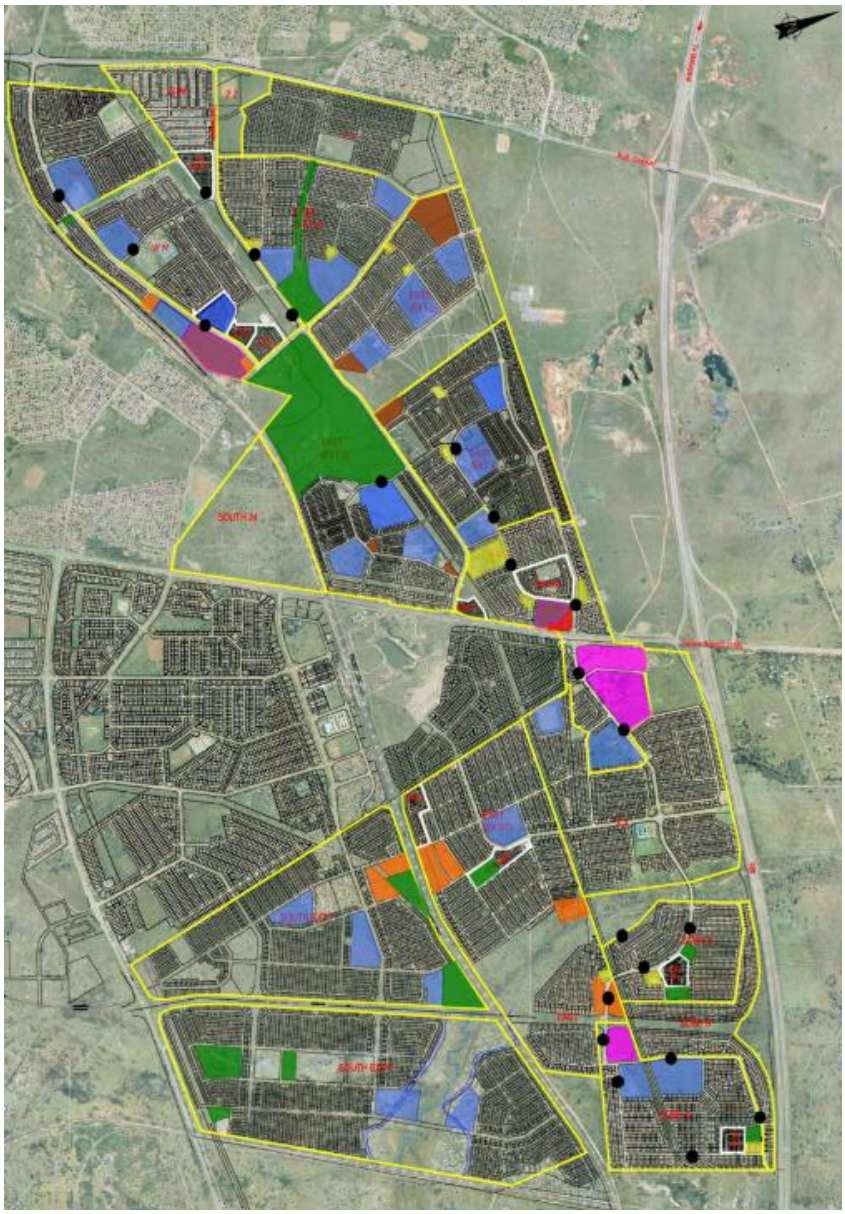

Figure 24: Cadastral Layout of Thorntree View. Dots indicate position of photographed areas

Figure 25: Images 1 -5, Examples of Green Open Spaces

Figure 26: Images 6 - 14. Existing School Sites

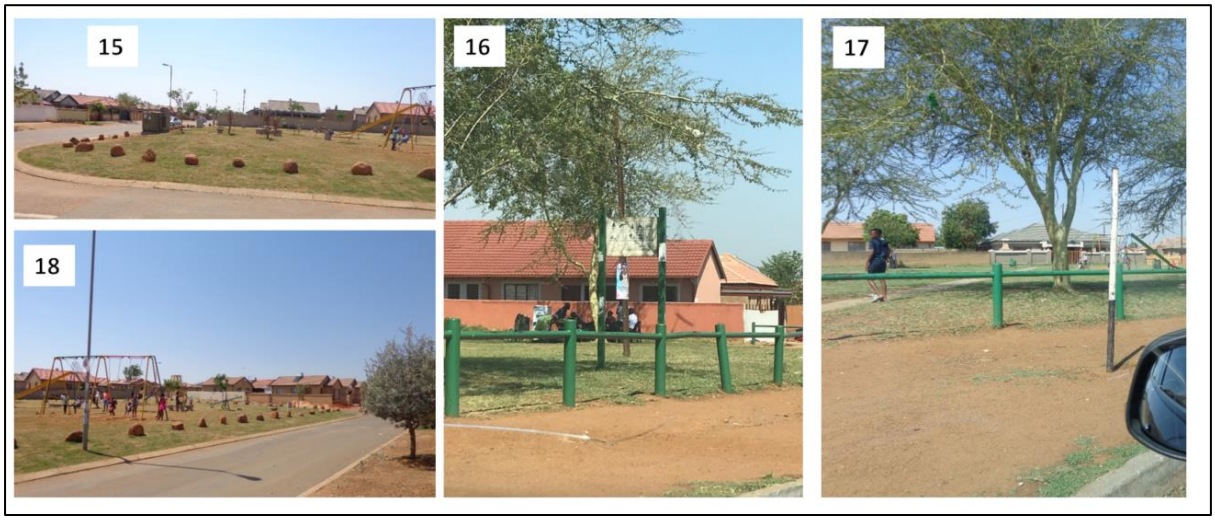

Figure 27: Images 15 - 18. Examples of formalised parks

Figure 28: Images 19 - 23. Examples of Sporting activity over a weekend

Figure 29: Images 28-32. Examples of community facilities and cluster housing

Figure 30: Images 33 - 39. Examples of Informal Trading Activities (1)

Figure 31: Images 40-45. Examples of Informal Trading Activities (2)

As previously discussed, Thorntree View has been developed in an area that was already established early in the 1990s – an area that is reflective of the inherent fragmentation of the old RDP style townships. This was evident during the site visit and manifested itself in the different areas of the settlement. The areas of the settlement to south of Hebron Road are predominately subsidised single dwelling units whereas the areas to the north of Hebron Road are made up of bonded residential units. Despite the attempt to integrate these two halves of the development, there are still elements that differ between the regions.

The challenge of developing well-located settlements is still one that Thorntree View needs to overcome; despite the intentions of the City to develop a settlement in line with the principles of BNG, the development is still located in an area that still has characteristics of Apartheid Spatial Planning. Housing density is low, with majority of the units taking the form single dwelling residential units and in some instances semi-detached and duplex units are present. There were also examples of access controlled cluster developments as evidenced in Images 29 and 31 in Figure 29, these developments are cordoned off with a security gate and the homes clustered around a central communal space offering recreational facilities.

The immediate space outside of people's homes have been used by residents in different ways depending on the requirements of the households. The road reserve has been used as a space for informal trading and a meeting place for social interaction (Figure 31).

Throughout the Thorntree View Development there are examples of informal and formalised open spaces. As evidenced in Figure 25, open spaces have been created through electrical powerline servitudes and at the edge of the settlement. These spaces are used by pedestrians and as well as for subsistence farming and agriculture. These spaces were located on the outskirts of the development with limited elements of visual security.

Formalised open spaces have been created through the provision of playgrounds and sports fields as evidenced in Figure 27 and Figure 28. During the site visit, various sporting activities were witnessed by local sports clubs making use of the soccer fields. The limited number of sporting and recreation facilities means that these areas are heavily trafficked and there is a high demand for them during peak times.

In general, the open spaces remain largely undeveloped and used for informal trading, agriculture and in some cases recycling. Despite several green open spaces being set out for sporting and recreation these spaces are heavily trafficked and lacking maintenance.

Provision in the land-use framework had been made for a number of educational and institutional land uses. Institutional land uses are defined as uses that are set aside for community facilities, crèches and mixed-use activities. In total nine (9) of the twenty-four (24) planned school sites have been developed – some of these are evidenced in Figure 26. In line with Behrens and Watson's (2014) recommendations for public facilities, to serve the approximate 30 000 units, 50 primary schools and 25 secondary schools are required. The remaining schools sites have either remained vacant or been subdivided into residential uses – this trend will be further explored in Chapter 7.

Community facilities are found within the development, both formalised and informal facilities are located within the development. A multi-purpose centre is located in the settlement (Image 30 in Figure 29)

Surrounding the existing shopping centre, informal trading is taking place (Figure 30). Informal trading is more prevalent in the Extensions south of Hebron Road. This area has more subsidised houses and the informal economy is crucial to the livelihood strategies of many of the residents. This can be attributed to the distance of this area from other commercial activities as well as the low-income nature of area.

In summary, the public space network within the Thorntree View Development is largely informal in nature. The soft/green open space network dominates the site in the form of the Kaalplaasspruit River System while hard open spaces mostly take the form of sidewalks which are not well-defined. Public facilities such has Schools have as far as possible been clustered together to allow for sharing of resources.

6.2 OLIEVENHOUTBOSCH

Olievenhoutbosch (OVB) is the outcome of a Public-Private Partnership (PPP) stemming from a response to the Financial Sector Charter and subsequent Memorandum of Understanding between the Banking Association and the National Minister of Housing in 2004 (Smeddle-Thompson, 2012). ABSA utilised an existing property in their portfolio to develop Olievenhoutbosch (OVB).

The project was initiated and conceptualised during the last quarter of 2004 and active project planning commenced in earnest in December of 2004 (Oosthuizen, 2012). Construction of the first housing units commenced in September 2006 with the first batch of units completed by end November 2007. The OVB project was envisaged as an integrated, mixed typology development incorporating sites for education, business, public open spaces, sport and other facilities required to establish a quality living environment. OVB was one of the City of Tshwane's first flagship BNG developments and was hailed as the City's prime example of how to implement a PPP. ABSA launched a comprehensive national housing programme in order to realize their strategic targets for housing delivery, jointly with RSA National Government; Olievenhoutbosch was regarded at the time as the leading sustainable housing delivery initiative under this programme (Bigen Africa, 2007)). The project aimed to deliver a mix of 5436 housing products in a single integrated development as follows:

- Subsidised Housing 3005 units (50% of development)
- Institutional/ rental apartments 1263 units (25% of development)
- Bonded housing 1168 units (25% of development)
- Social Facilities and Amenities (schools, clinics, community centre, cemetery etc.)

Table 3: Olievenhoutbosch Land-use table

Zoning	Land use	No. of Stands	Area (ha)	% of Area
Residential	Residential 1	3473	78,59	43,2
	Residential 2	27	8,57	4,7
	Residential 3	22	10.11	5,6
Business	Business 1	12	1,08	0,6
	Business 2	5	1,25	0,7

Zoning	Land use	No. of Stands	Area (ha)	% of Area
Industrial 2	Mixed Land Uses	13	0,42	0,2
Institutional	Clinic	1	0,16	0,1
	Church	10	1,50	0,8
Education	School	2	5,24	2,9
	Creche	6	0,76	0,4
	Community Centre	1	0,57	0,3
Municipal	Sub-Station	1	0,32	0,2
	ESKOM	2	5,42	3,0
Cemetery	Cemetery	1	0,60	0,3
P.O.S	Sport	1	1,80	1,0
	P.O.S	15	10,97	6,0
Streets			54,40	29,9
TOTAL		**3592**	**181,79**	**100%**

6.2.1 LOCATION AND SURROUNDS

Olievenhoutbosch falls within the larger Southern Region of the City of Tshwane's Region 4. The development lies on the edge between the City of Tshwane and the City of Johannesburg to the south and is situated between the Centurion and Midrand Economic Nodes.

The wider Olievenhoutbosch area originated in 1989 when the first squatters started to arrive on the Farm Olievenhoutbosch 389-JR. After the first democratic elections a number of transit camps were established and the majority of the squatters were relocated to these camps. In 1996 formalisation of the area began and by 1998 there were nearly 1665 residential households with approximately 8605 individual residents (Oosthuizen, 2012). Olievenhoutbosch has also been the scene of violent xenophobic attacks on foreigner owned shops as well as disputes between rival taxi operators (Oosthuizen, 2012). The Olievenhoutbosch area is renowned for its political sensitivity. This reality was circumspectly considered during initial planning stages and the public participation process. The surrounding community consists of many thousands of shack dwellers to the South and owners of smallholdings in the affluent Mnandi and Monavoni surrounds to the North and West of the Development site as illustrated in Figure 32 .

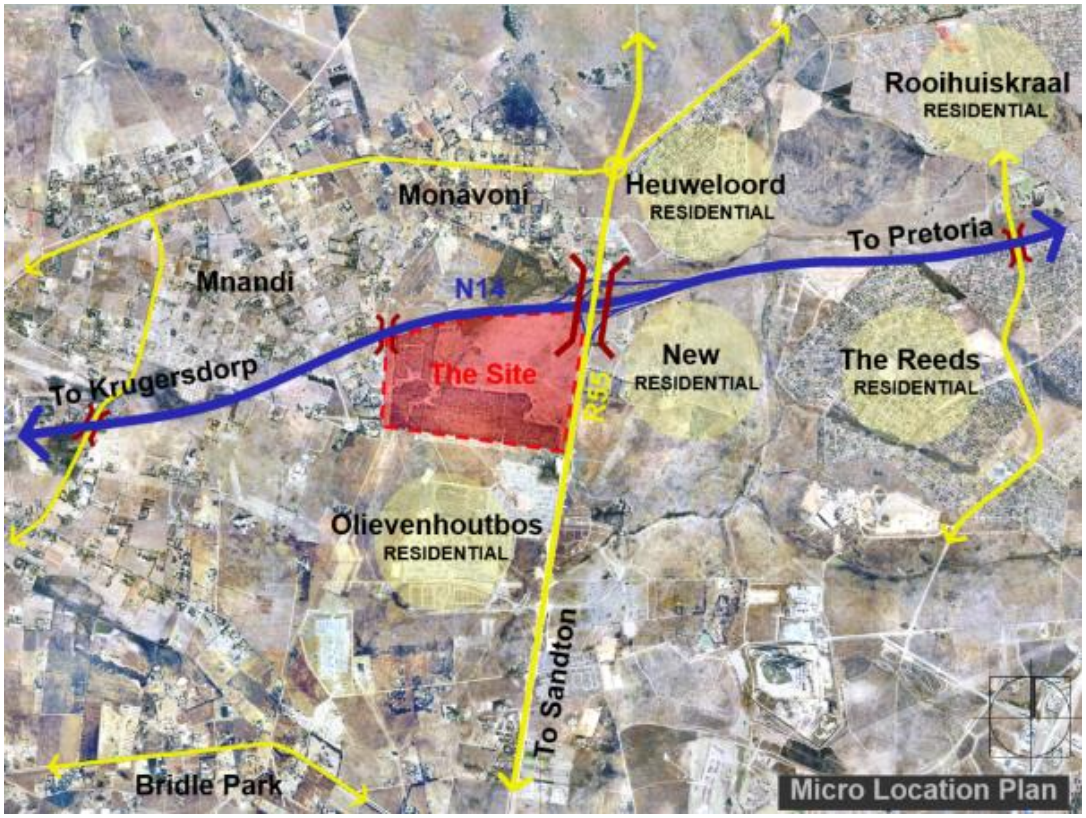

Figure 32: Location of Olievenhoutbosch (Source: UDF)

6.2.2 URBAN DESIGN PRINCIPLES

The Urban Design Framework (UDF) for the Olievenhoutbosch Ministerial Housing Estate was developed by Bigen Africa (Pty) Ltd and ADA Urban Design in July 2005. The framework provides a basic structure and sets out the principles to guide development of the site. The UDF (Bigen Africa, ADA Urban Design, 2005) lists seven principles to guide the framework plan:

a) Making Connections: emphasis on physical and visual integration with the surrounding community.
b) A balanced movement network: an inclusive movement pattern was proposed to allow residents better access and opportunity for exchange. Emphasis was placed on pedestrian, cyclist and those dependent on public transport.
c) A local district network: all basic daily needs, amenities, transport access and recreation to be within a five minute walk or 500 meter radius.
d) A broad mix of uses and amenities: broadening the residential and commercial variety to increase choice and opportunities for investors, residents and visitors.
e) Designing for safety and security: the environment should be planned, designed and managed in such a way that requires more effort, risk and difficulty for offenders to commit crime.

f) Invest in the public realm: the UDF recognises that streets and public spaces constitute our everyday experience of a place; it follows then that the design of streets, public parks and squares is important in terms of identity and sense of place.

g) Building typologies: incorporation of a variety of housing types at a suitable density. UDF prescribes a minimum density of 40-50 dwellings per hectare and a mix of housing types ranging from freestanding bonded units to subsidised rental apartments.

The principles described above were incorporated to develop a site layout plan as illustrated in Figure 33.

Figure 33: Olievenhoutbosch Site Layout Plan: Urban Development Framework

REF.	RESIDENTIAL TYPE		
	BONDED	1 DWELLING PER STAND	RESIDENTIAL 1
		60 UNITS/HA (2,37HA)	RESIDENTIAL 2
		SUB-TOTAL	
	SUBSIDISED	10m x 20m (1 DWELLING /STAND)	RESIDENTIAL 1
		8m x 20m (SEMI-DETACHED)	RESIDENTIAL 1
		4,5m x 20m = 6,20HA (ROW HOUSING)	RESIDENTIAL 2
	RENTAL	10,11HA (125 UNITS/HA)	RESIDENTIAL 3

Figure 34: Olievenhoutbosch Land use plan highlighting non-residential uses

6.2.3 Planning for Public Space in Olievenhoutbosch

In terms of its layout, Olievenhoutbosch recognises the need for mixed use within the development (Urban Green File, 2008). Land has been provided for schools, clinics, spots facilities, churches, community markets and a central landmark site (Urban Green File, 2008) – refer to Figure 34 for the land use plan indicating the above.

Certain elements were used to shape the structure of the development with the intention of creating a sense of place. The Urban Design Framework (Bigen Africa, ADA Urban Design, 2005) highlights the following:

a) A semi-circle of public open space at the core of the development around which everything else 'fits'. It was envisaged that this space will create an opportunity for symbolism and had the potential to be developed into a ceremonial public space.
b) Principles of complementary land use have been applied – schools are located adjacent to public open space; business and light industry are located along busy roads; commercial retail and taxi ranks are located at intersections in close proximity to high-density residential use, providing some live-work and walk-to-work opportunities on the site
c) Boulevards act as activity spines linking different residential areas while providing vistas from the centre of the site to the edges. Intersections create opportunities for activity nodes within which land is zoned for higher-density residential, retail and commercial use, as well as churches, crèches and clinics.

6.2.4 Evidence of Public Space in Olievenhoutbosch

As discussed in the previous sections, Olievenhoutbosch is the most established of the three case study developments, having been completed in 2009. The following images were taken during a site visit conducted during a weekday in September 2017.

Figure 35: Cadastral map of Olievenhoutbosch Housing Development. Dots indicate position of photographed areas

Figure 36: Images 1-6. Examples of open spaces in Olievenhoutbosch

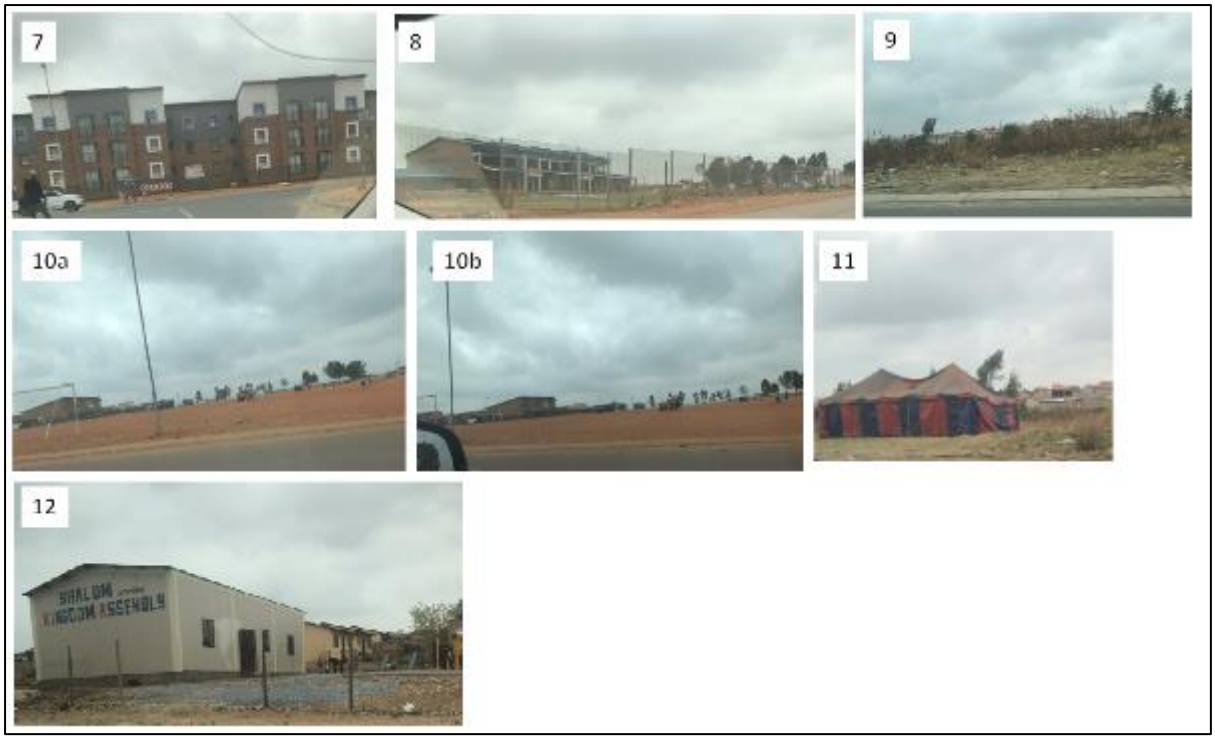

Figure 37: Images 7-12. Examples of multi-storey residential units and community facilities in Olievenhoutbosch

Figure 38: Images 13-18. Examples of commercial and informal trading in Olievenhoutbosch

The township layout makes provision for a range of housing typologies and densities. Provision has been made for multi-storey residential units in the area surrounding the semi-circle of open space. At

the time of the site visit many of the stands allocated for high density residential units have yet to be constructed and these stands are currently vacant. Construction of some new multi storey units is currently underway as evidenced in Image 7 of Figure 37.

Subsidised single dwelling residential units are located close to the central node of the development close to the transport links and commercial sites. Bonded houses are located on the outer parts of the development and in some instances have been boomed-off to create access-controlled areas within the development.

Over time the development of Olievenhoutbosch has become embedded within its surroundings – initially on the outskirts of the City of Tshwane, the settlement is now located close to the established nodes in the west of Tshwane as well as the emerging suburbs of Midrand and even benefits from good access to the Northern Development Corridor developing between Diepsloot and Fourways. Unlike Thorntree View, which feels far removed from the rest of the City, Olievenhoutbosch has managed to become a settlement that does not feel like a dormitory town.

In line with the Urban Design Framework as discussed in Section 6.2.3 the Olievenhoutbosch development incorporates a number of open spaces. At the entrance to the development formalisation of the open green space has been done – this is illustrated in Images 2a, 2b and 4 in Figure 36. The City of Tshwane was responsible for the conversion of the neglected space alongside the major access road, into a park with several pathways, seating areas and a playground for children. At the time of the site visit this park was predominately empty and only occupied by a few vagrants. Signage surrounding the park, installed by the City of Tshwane encourages residents to preserve the green spaces through responsible waste management.

The semi-circle of green/soft open space, as referenced in the Urban Design Framework is illustrated in Image 6 of Figure 36. In the framework the space was envisaged as one that had potential to be developed in a ceremonial public space, currently the space is used vacant and criss-crossed with informal pathways. However, despite not being formalised, the researcher noted that during the site visit the semi-circle offered a useful landmark from which to orientate oneself.

In general green/soft open spaces within the development have remained largely undeveloped and remain vacant. The long stretch of green space that runs on the western boundary of the development is mainly used for dumping as illustrated in Images 5 of Figure 36 and 9 of Figure 37. However, despite being between large tracts of vacant land the spaces are bounded by one of the main roadways within the development and are overlooked by residential units.

Provision is made in the land-use plan for a range of community facilities such as churches, sports clubs and educational sites. During the site visit evidence of these facilities was found as illustrated in Figure 37. Of the two sites earmarked for schools, construction of a Secondary School is currently nearing completion on one of the sites as illustrated in Image 8; the remaining site remains vacant and given its proximity to the green open space is subject to illegal dumping as illustrated in Image 5.

The development is also home to several churches (Figure 37) – some of these are formalised structures, (Image 12) while others are housed in tents in open fields (Image 11). The community facilities are generally combined with a crèche (Image 12) and located close to an open space. In so doing the development has managed to cluster several community and public services into identifiable nodes.

A large site allocated for sporting activities is illustrated by Images 3, 10a and 10b. The site is lacking in terms of sporting equipment and offers no formal sporting infrastructure – only one soccer goal post was visible, the pitch is overused with no grass able to grow. Given that the site visit was conducted during an early midweek morning is probably the reason for there being no activity on the sports field, beside that of buses and taxis using it for parking.

In general, as observed on the site, community facilities are predominately informal, heavy pedestrian activity means that ordinarily the streets and road reserves offer a meeting point for many of the residents. However, the lack of formalised facilities means that residents have to commute to surrounding areas to meet these needs. The fact that nearly 10 years after the completion of the development the only Secondary School, serving nearly 5000 households, is only now being finalised illustrates the long the wait for formalised community facilities can be.

The predominant economic activities are still informal in nature. Throughout the site, within road reserves and adjoining residential homes, are located a varied range of trading activities. These include Doctors Surgeries, Hair Salons, Internet Cafes, Car Washes, Supermarkets or ‘Spaza’ shops as they are locally known, and Food take-away points. The premises of these businesses have largely been erected through the owners’ efforts and out of necessity to generate income. As discussed in the literature review, most informal trading is viewed by outsiders and regulators as undesirable and something that should be eradicated. However, as observed by the researcher, while these activities may not conform to the traditional standards of engineering, planning and construction, they are a response to a need that could not be meet through formalised channels.

6.3 RIVERSIDE VIEW

Riverside View is an integrated housing development, aimed at providing affordable housing, strategically located between the Diepsloot informal settlement and the upmarket Steyn City Development in the north of City of Johannesburg Metropolitan Municipality. The development's location is strategic because it is surrounded by some of the wealthiest residential developments in Gauteng, but aims to provide affordable housing units within an area where there is a critical shortage of affordable housing (Valumax, 2017).

The property developer, is currently developing the land into a large scale mixed income, mixed typology and mixed tenure housing development, in accordance with the Breaking New Ground Policy of National RSA Government. The development began in 2013 and will eventually include approximately 11,000 housing units.

The initial phases of the project aim to deliver a mix of 5460 housing products in a single integrated development as follows:

- Subsidised Housing 3005 units (50% of development)
- Institutional/ rental apartments 1263 units (25% of development)
- Bonded housing 1168 units (25% of development)
- Social Facilities and Amenities (schools, clinics, community centre, cemetery etc.)

Unlike the developments in Soshanguve and Olievenhoutbosch, the Riverside View Development comprises of fully subsidised units in the form of high density 3-4 multi storey buildings with individual units 42m^2 in size. Provision is also made for single residential dwelling units with other rights approved by the Council – thus allowing residents to carry out other functions such as home businesses. Table 4 below summarises the land-uses evident in the Riverside View Development.

Table 4: Riverside View Land-use Breakdown

Zoning	Land use	No. of Stands	Area (ha)	% of Area
PHASE 1 - 6				
Residential	Residential 1	671	13,71	8,9
	Residential 1 – dwelling houses and other uses with the consent of the council	117	1,93	1,3
	Residential 3	4619	91,04	59,0
Business	Business 1	3	2,85	1,8

Industrial 2	Mixed Land Uses	13	0,42	0,3
Institutional	Institutions, places of worship, places of instruction, social halls	6	0,78	0,5
Education	School	2	7,37	4,8
P.O.S	Public parks	29	17,6	11,4
Streets			18.53	12,0
TOTAL		**5460**	**154,2**	**100%**

6.3.1 Location and Surrounds

Riverside View Housing Development is located in Region A in the north of Johannesburg. The portion of land is located between the two contrasting and conflicting worlds of the severely impoverished informal settlement of Diepsloot to the north and the affluent, gated high-income estates of Steyn City and Dainfern to the south. The site is an extension to the northern corridor development along William Nicol Drive and a part of the infill development between Diepsloot and Dainfern.

Figure 39: Location of Riverside View in relation to the surrounding area, (Valumax, 2017)

According to the City of Johannesburg's Regional Spatial Development Framework for Region A and findings from the ALDHC (ALHDC (Affordable Land & Housing Data Centre), 2013) (City of Johannesburg, 2010)increased population growth and expansion in Diepsloot is signalling the need to identify potential areas for the settlements expansion. The RSDF (2010, p. 49) states: "a critical shortage of land is indicated, with Diepsloot requiring "an area twice the size of the current settlement

only to accommodate the existing backlog in the area and to reduce the density in the informal settlement". In addition, the location of Diepsloot poses problems for extending the township, especially because there are competing claims on surrounding land for private, profit-driven development in the vicinity. Formal investment within Diepsloot has been limited in the past with little or no private investment in this sub-region.

In 2012, after a lengthy tender process, the Private Developer acquired the land from the previous land owner – the Johannesburg Property Company (JPC) – following the latter's decision to dispose of some of its property. The Private Developer, acting as the turn-key developer, submitted a township establishment application to the City of Johannesburg in December of 2012 for the establishment of the Riverside View Extension 28.

6.3.2 URBAN DESIGN PRINCIPLES

Owing to the development's location and in light of the items identified in the Regional Spatial Development Framework the urban design framework focused on ensuring the integration of the region, the creation of a mixed use, mixed income development and a well-managed and organised development.

The proposed Riverside View Development is intended to create a well-structured urban node that is able to accommodate a market currently excluded, ensure access to all public and private facilities and amenities and show case the concept of integrated `neighbourhoods' that are well managed and balanced (Valumax, 2017). The proposed development will consist of a diversity of land use activities including:

- Mixed use within development of which a nodes will be located on the northern portion of the site, within a high street on the southern section of the site, and along a commercial activity spine, also located on the southern section of the site;
- Commercial / Business & Retail;
- Residential at varying densities & income;
- Public facilities; and
- Open spaces system including public parks, recreation areas, river systems & nature areas.

Figure 40: Aerial and Perspective Views of the Riverside View Development (Valumax, 2017)

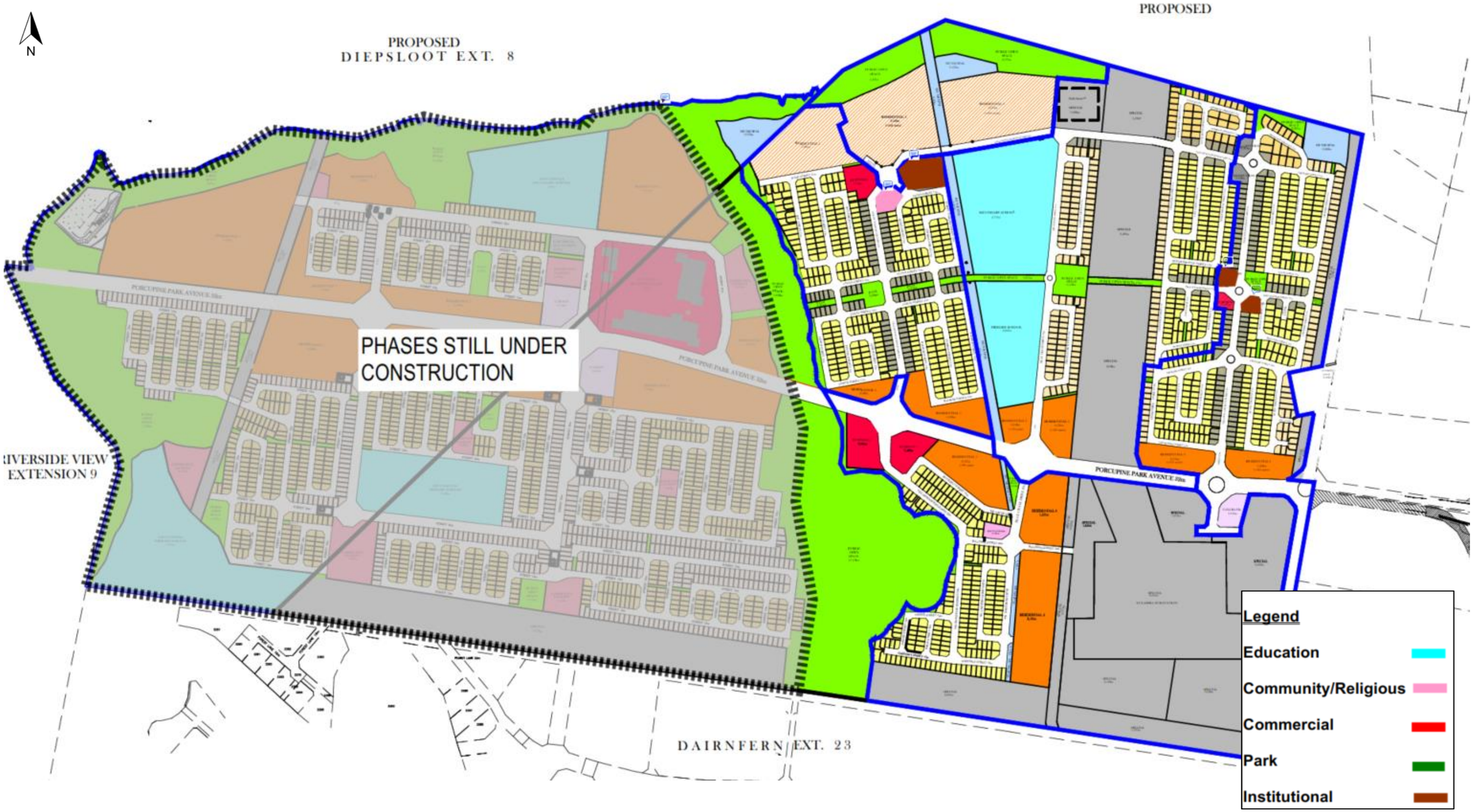

Figure 41: Riverside View Development: Land-use Plan (Source: Bigen Africa & Urban Dynamics)

6.3.3 Planning for Public Space in Riverside View

Public space has been allocated throughout the development in a variety of forms. The public space network is dominated by the river system and associated floodplain. Apart from the green spaces the development includes the following non-residential public facilities:

- 6 Commercial sites
- 15 Institutional sites, including places of worship, places of instruction, social halls, community facilities and clinics
- 3 Filling station sites and 1 Taxi Rank site
- 5 Educational sites

6.3.4 Evidence of Public Space in Riverside View

Riverside View has been developed most recently and residents have occupied units from 2015. Construction of the final phases are currently underway and as a result only a portion of the settlement could be included in the case study. Although the development is relatively new, there is still evidence of the establishment of a community, this was witnessed during site visit conducted in September 2017.

Figure 42: Cadastral map of Riverside View Integrated Housing Development. Dots indicate position of photographed areas

Figure 43: Images 1-5. Examples of Residential Units

Figure 44: Images 6-10. Examples of open spaces, play grounds and sports fields

Figure 45: Images 11-13. Examples of community facilities

Figure 43 illustrates some of the different housing typologies present within the development. The completed phases of the development include free-standing residential units, multi-storey fully subsidised flats and multi-storey rental units. Demand for housing in the area has meant that the majority of the units were sold out relatively quickly. Although residents have not been living in the development for a lengthy period of time, there is still evidence of personalisation of units and some residents have extended their units.

The open space network within the development is dominated by the natural river system and associated floodplain as well as the Electrical Powerline servitude. Throughout the residential areas of the development portions of land have been set aside as green open space and have been used as playgrounds for children (Images 6 and 7 in Figure 44) and for sporting activity (Image 9) in Figure 44. The township layout is such that public space and other non-residential functions have been clustered around intersections, with adequate provision made for pedestrian and non-motorised forms of transport. Image 10 in Figure 44 illustrates an example of this – the intersection is made up of a public open space (playground), a business site and two institutional sites. At the time of the site visit only the playground has been developed. Provision has been made for interconnection of the open space,

through the linking of green strips culminating in larger squares and eventually terminating at the natural watercourse not only allows for management of stormwater, but makes the larger open spaces more accessible . Once the development has had time to establish itself, there is potential to develop a well-defined open space network, however this space will need to be maintained and elements of visible protection and security through urban design will be crucial.

As discussed in Section 6.3, provision for Community Facilities and amenities have been made in the Riverside View development framework. These areas are generally clustered in nodes around intersections as described in the previous chapter. These facilities are located along bus-routes, and are accessible to pedestrians by means of walkways and protected by bollards which prevent vehicular access.

At the time of this research, construction of a Private School (Curro Academy) was underway – refer to Image 13 (Figure 45). The school, which will offer both Primary and High School classes will open in January 2018. In future phases of the development, provision has been made for 3 school sites. The development currently has few formal community facilities but there was evidence of early learning centres, as seen in Images 11 and 12 (Figure 45). The limited number of facilities is to be anticipated given that the settlement is still establishing itself. The current residents are reliant on the supporting social infrastructure to meet their needs for community related activities. The location of the development, between two established areas ensures that there is an already existing range of facilities and amenities within range of Riverside View. However, as the development starts to grow and become more established the need for more community facilities will arise. As evidenced by the Development Framework and Land-use Plan, future phases have been designed to include a larger portion of community related uses.

In contrast to the other case study developments, Riverside View has incorporated the hard open space network with the soft open space network – the green strips linking various erven are well accessed from the connected sidewalks and are thus well incorporated into the development. The hard open space network is well defined with paved sidewalks and roadside furniture.

6.4 CONCLUSION

The preceding sections have detailed the findings from the site visits conducted to each of the three case study developments. Having identified the guiding principles behind each of the settlements' planning and establishment, Chapter aimed to determine if these guiding principles had been translated into reality. The mapping exercise employed prior to conducting the site visits identified the priority areas for further investigation. In each of the settlements provision had been made for the inclusion of public spaces and facilities and in order to test the research statement it was necessary to conduct site visits to investigate the uses of these spaces in reality.

Public spaces and facilities were identified and categorised as either a) open space, b) space set aside for facilities and c) space set aside for economic activities. A description of the residential elements of the settlements was also provided. The rationale behind the categorisation of the spaces was to identify the aspects of a sustainable human settlement namely environmental, social and economic elements within the settlement.

The findings revealed that in both Thorntree View and Olievenhoutbosch which are more established settlements than Riverside View, the public spaces have evolved with the community making use of them. In these settlements there is evidence of modification and customisation of the spaces set aside for public space. In general open green spaces within these two settlements have remained vacant with the residents either utilising them for informal trading, transportation nodes or informal settlement. Few examples of formalised 'green space' such as parks and playgrounds, were identified in Olievenhoutbosch and Thorntree View. In the case of Riverside View, owing to the low population and that the settlement still being developed the designated open spaces have yet to be fully utilised, however there was evidence of formalisation of these spaces.

In general the sites that have been zoned for community and institutional purposes have been developed incrementally – apart from in Riverside View where the provision of a School site has kept pace with the rollout of the housing units. The informal development of these community sites as either sporting fields, informal retail stores or 'tent' churches further highlights the trend that overtime, where formal facilities have not been provided, the community have attempted to provide for their own needs.

The subsequent Chapter presents the second set of data sourced from interviews with professionals in the housing field. The interviews were used to clarify some of the elements identified during the site visits and to gather respondent's opinion of planning, importance and use of public spaces in these developments.

CHAPTER 7: RESEARCH FINDINGS AND ANALYSIS FROM INTERVIEWS

The following chapter will unpack the results from interviews conducted. The interviews were conducted with various professionals with experience in the planning and implementation of integrated housing developments. Interviews followed a semi-structured format and interviewees were posed a set of questions that sought to answer the research questions. A sample of the interview questions is shown in Appendix A.

A total of seven in-depth interviews were conducted. The sample included town planners, project managers, civil engineers, urban designers, developers and local RSA government officials involved in strategic planning Refer to Table 2 for a list of respondents.

7.1 HOUSING POLICY

In general respondents defined a sustainable human settlement as one that is well-located and one where residents can live, work and play. Most respondents agreed that it is important that a settlement is close to facilities and job opportunities and tries to balance social and economic opportunities. Respondent D, an official from the City of Tshwane Strategic Planning indicated that Breaking New Ground provided a framework for the establishment of sustainable human settlements and that the intention of the policy was to create well-managed settlements. Respondent C, an urban designer involved in the Olievenhoutbosch Development described sustainable human settlements as "a place designed for people to live but at the same time a place that people want to live in".

Integrated Housing was defined as a settlement that incorporates various land uses, housing typologies and income groups. Integrated settlements were identified as closely linked to the achievement of the objectives of Breaking New Ground.

Respondent D, highlighted however that there is a disconnect in the translation of national policy into grassroots implementation and that while national policy provides a vision for housing, local government who is tasked with implementation of this vision struggles on how to achieve this.

The interpretation of policy was critiqued by Respondent F, they indicated that in the South African context policies have not been well thought out. Echoing the sentiments from Chapter 2, they highlighted South African policy makers' tendencies to adopt policies from other countries without taking into account the context in which that policy was developed and whether it is suitable for the South African experience.

"Context is very important when it comes to policy formulation – [we] need to look at the survivalist strategies of the people and take these into account and not dismiss them" – Respondent F

7.2 PUBLIC SPACES

7.2.1 DEFINITIONS

Public spaces were defined as spaces that are accessible to the public that can be used by the community at no additional cost.

"Public spaces are those spaces that are shared, they can be 'soft' spaces like parks – which is often what people have in mind when the word 'public space' is mentioned – but they can also be 'hard' spaces like sidewalks. We sometimes forget about the sidewalks" – Respondent C

Public spaces were also described as spaces that are not privately owned, the distinction was made however that shopping centres and other commercial entities that are owned privately are still accessible to the public and therefore also considered public spaces.

"Public space can also be classified in terms of access – access factors determine how public a space is. However, even though commercial spaces are the initiative of a private developer, it is still open to the public for their use but only to those who can 'afford'. So even with space that is supposed to be public, there are still limitations and restrictions." – Respondent A

Public spaces were also described as having different views depending on the cultural setting in which it is located. Respondent C noted that in historically African settlements the majority of space is considered as public space whereas in European settlements majority of the space is private.

In general there was a consensus amongst respondents from both the private and public sector that public spaces are spaces that are used by the community for social interaction, recreational and physical activities and economic related activities.

7.2.2 IMPORTANCE OF PUBLIC SPACES

All respondents agreed that public spaces are important in the context of integrated housing developments. Respondents indicated that public spaces contribute to the sustainability of a settlement by addressing social, economic and environmental aspects. Another common element that featured in the responses was the notion that public spaces contribute to the sense of place and give a community an identity. They offer residents a place to engage with each other and build community relations through interaction and integration. Public spaces contribute to the economic sustainability of an integrated housing settlement because they are often the location of informal

traders and therefore help to stimulate the local economy. Understanding that informality does not always mean illegality, is a point that was stressed by Respondent B, a project manager working closely with communities affected by Developer-Driven Development. Respondent B notes:

"*Many people are unemployed and they rely on informal trading to generate an income to provide for their basic needs. But where must these people trade? The space is disappearing – the traders set up in one area, but are forcibly removed and have to find somewhere else to operate. Informal trading has too often been associated with [the] crime elements. Formal spaces are needed for these people to operate" – Respondent B*

From an environmental perspective, respondents noted that public spaces, especially green open spaces are required to promote conservation of the natural environment. Built environment development, such as the construction of housing infrastructure, changes the natural environment and it is important that preservation of the natural environment is taken into account when public spaces are planned and provided for.

Respondent E, a Development Manager in private practice, indicated that public spaces are particularly important in integrated housing developments especially given the range of income groups and the impact densification has had on the size of the residential stands within these developments.

"In a lot of BNG developments, the size of the single dwelling stands has decreased and the introduction of multi-storey walk-up 'flats' has resulted in a reduction of the private space allocated to residents. A more densified housing settlement combined with low income households means that they are more dependent on public spaces provided in the surrounding areas to meet their need for social and physical interaction." – Respondent E

Public spaces were also regarded as points of integration – offering a place for people who would not ordinarily meet a chance to come together. Respondent F highlighted the importance of schools in this regard.

From a developer's perspective, Respondent G indicated that formalised public spaces are important when marketing a development to a perspective community.

"People want to know that there will be places for their children to go to school and for them to play safely. These facilities become important selling points" – Respondent G

7.3 STANDARDS AND GUIDELINES IN THE PLANNING OF PUBLIC SPACE

When asked about their knowledge of the applicable standards and guidelines used in the provision of public space and community facilities most of the respondents with a town planning background referenced Behrens & Watson's "Principles and Guidelines for Layout Planning" (2014) and the CSIR's Guidelines for the Provision of Public Facilities (2012) and Guidleines for Settlement Planning (2000). These standards are used to guide how settlements are planned and ordered and provide recommendations to the the number of facilities required per number of dwelling units. These standards were discussed in Chapter 3.

Respondent D commented that while the standards are "nice to have" they tend to be too theoretical and the implementation of some of their recommendations can be impractical. They highlighted the recommendations for the number of primary schools to be provided per dwelling units is 1 per 600 dwelling units. This means that for a settlement with 10 000 units would require 16 schools the average space required for a school is 0.5 ha – this would mean a total of 8 ha (80 000m^2) would need to be set aside. In the case of the Thorntree View, based on the housing yield of 30 000 a total of 33 schools (primary and secondary) would be required. However, to date a total of only 9 of the 24 planned schools have developed.

The practicality of the implementation of the standards and guidelines was critiqued quite strongly by some of the respondents - the above scenario is one such example. Respondent F highlighted that there was no connection between housing policy and the standards.

"We need to relook at standards – policy changes but the standards stay the same and do not reflect the reality of the people they are supposed to assist. We do need standards, they are important, but the need to be adapted to the current realities. Standards are holding us back from developing sustainable human settlements. Policy and strategies are nice, but policy and strategy don't build a city, standards and guidelines do." – Respondent F

It was noted that during the planning stages of a development it is important to consider the requirements of public spaces and community facilities and take these requirements into account as part of the approval process will involve the distribution of the layout to various stakeholders. These stakeholders include other national, provincial and local RSA government departments but also various community based organisations during the public participation process. Respondent A mentioned that because other land uses, like those zoned as "institutional" which include community halls, crèches and churches, do not have to follow an approval process in terms of prescribed minimum requirements, these spaces are often included at the discretion of the town planner or urban designer.

"The aim is to create a vibrant community – that is done by including a range of land uses. Standards and prescribed minimum requirements need to be taken into consideration but also not forgetting to include spaces that are community centred and not necessarily mandated by a particular legislation." – Respondent A

What was also highlighted throughout most of the interviews was the need to consider the settlement within the broader context of its surrounding and to take into account what is the status quo of the public spaces and community facilities in the surrounding area. This can be done during the Market Research Study or the Feasibility Study. This is often important in providing guidance in terms of the commercial and business sites that should be included in the development but also the hierarchy of those commercial sites – the market demand will dictate whether the supporting community requires a local or regional commercial node.

Through the interviews the general consensus was that the standards and guidelines are in place to provide a vision of what should be included in a settlement. However there is a chance of the provision of public facilities becomes a checklist exercise.

7.4 How Public Space is Used

The general consensus was that public space is not being used as intended. The respondents commented that public spaces are often planned but the challenge of the developing those spaces further still exists. Public spaces especially those not intended for commercial purposes by private developers, like shopping centres, often remain undeveloped.

The respondents indicated that local government, who often become the custodians of public space, are often tasked with developing and maintaining these spaces. However, because of limited capacity in local government – both in terms of budget and human resources – public spaces are often viewed as "nice – to – have" and not as essential as the provision of basic services and other functions delegated to local government.

"The onus is on local government to drive development in accordance with its spatial development framework, and not to be dictated by the objectives of private developers" – Respondent A

As evidenced in Chapter 6, even though public space is not always used as intended, there is still evidence of social and economic activities taking place. In some instances where there are no formal facilities a community will improvise and take the initiative to develop the space. This suggest that overtime a community will create their own public spaces in line with what they require. This point was confirmed during the interviews where it was pointed out that the built environment professionals' interpretation of what is formal and what is informal differs from that of the community.

Professionals are trained to formalise and provide structure, but it is important for them to recognise the importance of self-development and that what professionals interpret as acceptable use of a space, in terms of regulations, codes and standards, is not always how the community will make use of a space.

"As urban practitioners and professionals involved in the development of settlements, we are providing a skeleton. The community will inhabit that skeleton and grow into it." – Respondent C

Respondents indicated that even if a space has not been developed further, there are several elements that can be put in place during the planning stages, which contribute to how that space will be used in the interim. The importance of visual surveillance and location of the space within the settlement are very important. If a space is overlooked by residential units an element of natural surveillance is added and this helps to create a feeling of more safer and secure spaces. Additional elements include uninterrupted lines of sight and lighting as well as clearly defined public and private spaces – achieved by perimeter building development comprising of erven back to back with public fronts and secure private backs. If a space is not designed with safety and security in mind, it tends to be avoided and neglected. The location of public spaces and facilities is also important – spaces that are located close to natural watercourses and on the outer edges of a settlement tend to also be avoided as they are considered unsafe.

During the interviews the role of local government was emphasised several times. The general perception from those in private practice was that the involvement from the local government can be improved. The capacity issues in local government as well as the range of functions and services the municipalities are tasked with providing was recognised by those in private sector but there was is still a need for improved local government ownership and involvement not only in terms of public spaces but also in the housing development process.

Respondents from local government also recognised the important role they have to play in the provision and maintenance of public spaces but also highlighted the importance of communities taking ownership of their spaces and not relying on the state. While intention from local government is there, the structures within the municipality do not always facilitate implementation. Aligning of programmes and budgets between different stakeholders is very important to ensure that the departments involved with implementation are aware of the requirements within a particular development and can adequately program and budget for public spaces and facilities.

"Timing is very important when it comes to how public space is used. It is a bit of a chicken and egg situation: Public spaces and facilities for the community need people and people need well-designed public space. You cannot build the school for no people but at the same time you cannot build a

settlement with no schools. We need to better align our priorities with those of private developers and other [RSA] government departments." – Respondent D

7.5 What Happens to Under-Utilised Spaces?

The general consensus is that under-utilised spaces are usually neglected and not maintained. They are sites of informal settlement, illegal dumping or informal trading. They are considered as "left-over" spaces that are to be avoided as they may be the associated with criminal activity and are unsafe.

Respondents commented that there is a challenge in striking a balance between the provision of housing units to alleviate the housing backlog but also to provide vibrant and integrated settlements in line with the principles and objectives of BNG.

In certain instances, applications to re-zone and subdivide portions of land previously earmarked for public space or non-residential use can be made. In the case of the Thorntree View development, this practice has been adopted. The table below indicates the number of stands that have been re-zoned as well as their initial zoning and the revised zoning.

Table 5: Consolidated and rezoned stands in Thorntree View

Erf No.	Previous Zoning	Revised Zoning
676	Institutional (Educational)	Residential, community & park
842	Educational	Residential (bonded)
414	Educational	Residential (bonded)
1036	Educational	Residential (bonded)
1019, 1020, 3	Educational	Residential (bonded)
79	Educational	Residential, church, park
1077	Institutional (Educational)	Residential
1078	Special	Residential with POS
1079	Business	Residential
1080	Public Garage	Residential
22174	Institutional/Special	Residential
21848	Institutional/Special	Residential
22804	Institutional/Special	Residential
22805	Institutional/Special	Residential
22806	Institutional/Special	Residential
Erf 1 (572, 573, 574)	Commercial	Residential 4
Erf 709 -710	Special	Residential
Erf 253	Institutional	Residential

Table 5 above indicates the trend identified by some of the respondents interviewed. The rezoning and subdivision of stands is dependent on a range of factors but usually the developer identifies the potential of a portion of land to be subdivided and will submit the necessary applications and

supporting documents to have the portion of land rezoned and subdivided. In general larger stands such as school sites are preferred over smaller stands that will likely not yield sufficient housing units to be feasible. The subdivision and rezoning of land earmarked for public use should however be approached with caution. As one respondent remarked, land is very important and sometimes owners are too quick to sell off land.

"You can't bring public spaces back – once the land is changed then the purpose is gone." – Respondent C

7.6 How Can Public Spaces be Better Utilised?

Respondents were asked how public spaces can be better utilised and how we can ensure that the public spaces are used as intended during the planning stages of a development. One respondent commented that because the municipalities are the first investors in these spaces it is important that they ensure that the spaces are well maintained and secure. It was further noted that because it is the community that will be using the spaces, they should be involved in aspects of planning, developing and maintaining the space. By involving the community in the design of these space creates a sense of ownership and ensures that they will more likely take care of the space without relying solely on the municipality.

During the design stages it is important to incorporate the principles of natural surveillance and clustering of community facilities around central nodes. Accessibility was also identified as contributing to how well spaces are utilised.

In certain instances, public spaces can become over utilised – this occurs when there are too few facilities provided within a development ultimately placing strain on the existing facilities. In such cases residents have to supplement the need elsewhere, by either travelling to surrounding areas or going without a certain facility. Such examples include the transportation of school children to outside areas because of the over-capacitated existing schools – this is contrary to the objectives of a sustainable human settlement that aims to create a convenient and accessible place where residents can live, work and play without having to travel long distances. A further example was highlighted during both the site visits and the interview is the under provision of sporting and recreational facilities – these spaces are often utilised by several sporting clubs and while sharing of facilities is recommended, in these instances the high demand for these facilities has led to a deterioration the quality of the facility (Respondent A and Respondent B). It was however argued that while the local municipality, is responsible for the maintenance of these facilities the onus is also on the residents to collectively look after these facilities which they frequently make use of.

To ensure that public spaces are developed as intended, one respondent commented that there needs to be a concerted effort between public and private sector to form partnerships that will formalise

how and when public spaces are developed. Undeveloped land usually remains vacant and prone to informal settlement and potential illegal activity, this can lead to a decline in property value as surrounding residents may opt to relocate. This in turn has an impact on the developer in terms of his return on investment as well as the municipality in terms of collection of rates and taxes. It is therefore in the interest of the developer and to an extent the municipality to ensure that these "forgotten spaces" (Respondent D) are included in the programming and planning of the development.

Respondent A indicated that in some instances a community can approach the Developer to develop a facility such as a church or crèche on behalf of the community. This sentiment was echoed by Respondent E who suggested that that the Developer can include the development of certain community facilities as part of the Corporate Social Investment (CSI) initiatives. However, this respondent also cautioned that this type of intervention should be done in partnership with the community to ensure that the end result will meet a need and that the community have "bought into" the concept, otherwise once the Developer has left the site there is a possibility that the facility may not be maintained or cared for.

Respondent C and F also re-iterated that the process of forming a community is one that takes time – it does not happen overnight. A portion of land may be vacant at the moment or seemingly underutilised but it does not mean that in the future it will still be the case. It is important to make the space safe so that it does not become a neglected space but then to allow the natural process of settlement and community building to occur.

In general the respondents indicated that if one is to ensure that spaces are utilised it is important to involve the community before construction even takes place. This will allow for a better understanding on the part of the Developer or Municipality as to what is required by the community and in turn ensure that what is provided will be used and taken care of. In the initial stages of planning and development of these spaces it is important to think of how the spaces will be used and by whom and form mutually beneficial partnerships with relevant stakeholders to ensure that ultimately all parties benefit.

"It is important to correctly package the potential of land, to not only developers but to the community as well" – Respondent D

7.7 Role of Local Government and Private Sector

Throughout the interview process the involvement of local government in the provision of public spaces and facilities was highlighted. Given that local government is the custodian of public space and is tasked with the maintenance thereof it is important that they are involved in the planning and programming of these facilities. The implementation of housing developments is a complex process involving many stakeholders and the co-ordination of this process often falls to the Municipality. The

limited capacity in local government means that the function of housing management is often delegated to private sector developers.

Respondent D indicated that local government needs to have a clear vision of its housing directive. The delegation of the responsibility to the private sector has resulted in the state being less involved and influenced by private sector objectives. Respondents commented that in certain cases there is a miss-alignment between local government and private sector priorities – private sector tend to chase profit and greater return on investment while local government has to balance the provision of basic services with the collection of rates and taxes. It is therefore a challenge for local government to still enforce its SDF and decline private development – be it in the form of large scale greenfield development or the subdivision and rezoning of portions of land set aside for public use – that have the potential to increase the income collected from rates and taxes

This contradiction also manifests itself in the provision of public spaces and facilities. In BNG settlements the mixture of subsidised and bonded housing means that a larger portion of residents are less likely to be in a position to contribute towards rates and taxes. Local government funding is sourced from various other RSA Government Grants such as the Urban Settlements Development Grant for the provision of internal municipal services, the Human Settlements Development Grant for the construction of top structures and various other grants from the Depart of Energy. The funding for maintenance and provision of public spaces is sourced from the Municipalities own budget which is collected from rates and taxes. Respondent F commented that while there are some special grants that can be accessed for the construction of public facilities, the process of accessing these funds is complicated.

7.8 CONCLUSION

This Chapter outlined the findings from the interviews conducted with professionals in the built environment. Housing policy, the definition of public space and the importance thereof, standards and guidelines in the provision of public spaces, the various uses of public spaces and reasons for non-use of public space as well as the role of local government were discussed throughout the Chapter. The following conclusions can be drawn from the interviews.

Firstly, the interviews indicated that the intentions of the BNG policy were to create a settlement where residents can live, work and play; is well located and has a range of income groups and land uses. Respondents however, indicated that the policy is removed from actual implementation and is more aspirational than practical. The gap between housing policy and implementation is one that was highlighted several times. This gap should be filled with appropriate standards and guidelines as these are supposed to be the tool that translates the vision of policy, but unfortunately as the respondents

indicated the standards and guidelines have remain unchanged overtime and are often in conflict with policy.

Secondly, respondents agreed that public spaces and facilities are important and beneficial, listing benefits including social, health related, community building and economic aspects. They also highlighted that well maintained public spaces create a sense of place and can be a source of pride in a community. The correlation between planned and intended use of public space was relatively low. This was attributed to the manner in which these spaces are viewed in relation to the provision of basic services – public spaces are regarded as surplus and non-essential.

Lastly, the general thread through the interviews was that the development of public spaces and facilities is one that takes time and occurs over the lifetime of the development. Overtime the community will customise and modify the spaces to suit their requirements and in certain instances these modifications can be informal or incremental. As one respondent commented: *"just because the church is in a tent and not brick and mortar building, does not mean that the space is any less likely to serve the community's needs"*

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

In the global South, and especially sub-Saharan Africa, rapid urbanisation has resulted in increasing pressure on Governments in the global South to accommodate a growing population in urban areas. These urban areas are ill-equipped, to provide shelter for population whose income levels are amongst some of the lowest on the African continent (African Centre for Cities, 2015). In a post-colonial era, most African Governments have attempted to deal with rapid urbanisation through various responses, but the provision of housing has remained central to improving the quality of life of people living in urban areas.

As the title of this thesis "From Housing to Human Settlements: the Role of Public Space in Integrated Housing Developments" suggests, the research deals with the role of public spaces in the shift from housing to the creation of human settlements. The motivation for the research stemmed from the initial question of how housing policy is interpreted and eventually implemented. The built environment is the stage where most of the implementation of housing policy plays out and as such it is a good point of departure for research into housing development. As Landman, et al., 2009, and other authors have commented, the quality of life of residents of a settlement and the quality of the built environment are strongly related. It then follows that in order to create a well-manged settlement that achieves the objectives of sustainable development, it is necessary to ensure that elements of the built environment are aligned with this objective. Located in the built environment is both the private and public realm – the former related to the confines of a private dwelling, and latter related to the space outside the private dwelling. If the quality of the built environment influences the quality of life of people then it follows that a good quality public space is an important contributor to a well performing settlement.

This Chapter concludes the research by discussing the main objectives of the study and the key questions associated with each objective.

8.1 HOW ARE PUBLIC SPACES CONCEPTUALISED IN POLICY AND IMPLEMENTED IN HOUSING DEVELOPMENTS?

The sub-questions associated with the first objective include:

a) What are the principles and objectives of BNG?
b) What standards and guidelines are used in the provision of public space?
c) Are public spaces being used as planned?

The research found that in the context of the three case study developments and in the interviews conducted the initial starting point for the settlement development was the achievement of a settlement in accordance with the objectives of Breaking New Ground. The settlements all included urban design principles that highlighted the need for well-defined public spaces and streets; responsive design that considered safety, security and convenience in their layouts; a network of streets, parks, squares and playgrounds linking residential areas; a range of housing typologies and ownership models and higher densities to promote and sustain public transport.

Evidence gathered during the site visits indicated that the urban design principles have been applied in the settlements with varying degrees of success. The basic settlement fabric has been provided – roads, water, sanitation, electricity and housing – however in the settlements that are more established namely Thorntree View and Olievenhoutbosch the community has built on this fabric to create a vibrant environment that includes multipurpose public spaces. In the case of Riverside View, the basic fabric of networked infrastructure has been provided but the community have yet to imprint their identity on the space – if the trend in the other settlements is to be accepted then it follows that as the community establishes itself in the space it will start to take on its own identity.

From the interviews it was clear that from the perspective of the professionals' involved in the planning and implementation of integrated housing developments that there is a gap between what is planned and what is implemented. Some of the reasons for this included the fact that the delivery of housing is a complex one that involves many different stakeholders. Each stakeholder has different ideas of what should be done and the end product is usually the outcome of a negotiated process. In terms of public spaces and facilities – these are usually the first elements to be excluded in favour of land uses that can generate higher financial returns.

8.2 Are Public Spaces Linked to Improving Quality of Life

The sub-questions associated with the second objective include:

a) **Why are public spaces important in the context of integrated housing developments?**
b) **What benefits are attributed to public space?**

From the research it was concluded that public spaces do contribute to an improved quality of life. Especially in the context of integrated housing developments where it is important to facilitate integration and interaction between residents of different income groups – public spaces and facilities offer this opportunity. The benefits of public space identified are also linked to an improved quality of life – health benefits, social interaction and community building, environmental benefits and economic benefits in terms of creating a livelihood.

8.3 What Effect Does Densification have on the Provision of Public Space

The sub-questions associated with the third objective include:

a) **What can be done in the planning stages to ensure that public spaces are included in the layout?**

From the research it was concluded that the principle of densification needs to be understood carefully, the implications of increasing gross and nett density are important. In general the research identified the importance of packaging the potential of land set aside for public space – this would mean attaching several options for land use rights to a portion of land so that should densification or rezoning be proposed on that portion of land in future a lengthy town planning application could be avoided. It was found that a more strategic approach to land use planning is required and that practitioners need to think holistically but also allow for flexibility in their approach to land use control.

8.4 What is the Role of Local Government and Legislation in the Provision of Public Space?

The sub-questions associated with the fourth objective include:

a) **What is the role of local government in the provision of public space**
b) **What monitoring and evaluation tools are in place to ensure public spaces are used as indented**

Local government has a very important role to play when it comes to the provision of public space. From the research is was concluded that as the custodians of public space it is important for local government to be involved in the planning and maintenance of these spaces. It was also evident that it is not only the responsibility of local government to maintain public spaces but also all those who make use of the spaces – the community has a role to play in determining the quality of the public spaces it wants.

The research also concluded that while there are standards and guidelines for the provision of public space and facilities these standards need to be revised if the objectives of policy are to be achieved. Tools for monitoring and evaluation are not widely used when it comes to public space and facilities – this can be attributed to the varied range of stakeholders within local government each having different priorities and budgets. The process of monitoring and evaluation becomes complex because no one department is willing to take responsibility for the outcomes.

8.5 CONCLUSION

The argument for a qualitative approach to the provision of housing is one that has been discussed in literature by several authors and outlined in the Literature Review of this report. A quality living environment is one that is expressly stated in housing policy; Breaking New Ground notes: "there is a need to move away from a housing-only approach towards the more holistic development of human settlements, including the provision of social and economic infrastructure" (Department of Housing, 2004). Quality places are described as having a range of land uses and a mixture of public facilities and amenities. One aspect of a quality place is the provision of safe, quality and accessible public spaces which is argued by Daniel (2016) as a key strategy to achieve sustainable development.

This research subsequently progressed to an understanding of how these public spaces are conceived in planning and implementation of housing developments and whether they are serving their initial purposes. The importance of public spaces in housing developments was questioned and whether the benefits of these spaces, as described in literature are being experienced – ultimately the value attributed to public spaces needed to be determined.

The housing delivery process is a very complex system with a range of stakeholders and actors. While, housing policy provides a vision for human settlements and lists several objectives it does not adequately articulate how to achieve these objectives. The interpretation of policy and how it is implemented needs to be further refined. Ideally, this refinement is supposed to be described in standards and guidelines but despite changes in housing policy, standards and guidelines have remained largely unchanged.

Public spaces and facilities are important to the creation of a vibrant and liveable community. These spaces offer a range of benefits to the community and are particularly important in BNG developments where the private dwelling space is decreasing and residents are more reliant on the public realm to serve as a space for social and community interaction.

However, public facilities and public spaces are under threat – they face increasing competition with other land-uses that are viewed as more valuable in terms of income generation for both private developers as well as local government. They are also spaces that are under managed and neglected and regarded as "nice to have" and not essential to the provision of basic services.

Despite this, public spaces do play a role in facilitating the shift from housing to human settlements. But it is an organic process that occurs over a period of time – the urban fabric of networked infrastructure provided to communities needs to be inhabited and customised as the community grows and evolves. Public spaces therefore develop incrementally and sometimes informally, which is contrary to the perceptions of formalised development adopted by built environment professionals. To ensure that public spaces still offer a respite to communities, residents, with support from the

public and private sector, need to shape these spaces into places that they as the users, will get the most benefit out of.

In closing, the research hypothesis premised that despite the evidence to support the benefits and importance of public spaces in housing developments, these spaces are not used as initially planned. Throughout the research what has emerged is the importance of the inclusion of public spaces in the planning and urban design of housing developments. However, the implementation of the urban framework provided by planning and policy is one that occurs incrementally over time and implementation may at times be in conflict with the norms and standards stipulated by built environment professionals. Communities eventually shape their settlements into the spaces best suited to their requirements – the challenge to built environment professionals is therefore to reconcile the planned vision for public spaces with the actual needs of the community in which there are located. The research findings point to the importance of the role of public spaces in creating a quality living environment and achieving the objectives of sustainable human settlements. The findings also illustrate that while this role is recognised by urban professionals in Gauteng, the manner in which public spaces are used and managed does not reflect this recognition – the underdevelopment of public spaces as discussed in the literature review has been identified in this research.

8.6 Areas for Further Research

One of the recurring elements identified throughout the research findings has been the importance of the role played by local government in not only the provision and maintenance of public spaces but also in ensuring that land use rights of public spaces are upheld. The research also highlighted the constraints experienced in the coordination between the different spheres of government in the planning and budgeting of public spaces and facilities. Owing to the fact that a large portion of the data that formed part of this research was collected from professionals in the private sector, further investigation into the opinions of local government professionals would provide an alternative perspective into the planning and implementation of public spaces. Possible research into the sources of funding available for the provision of public spaces and facilities and whether these funding streams are being unlisted would also provide further insight into the financing of public spaces.

The research also highlighted the importance of preserving public spaces and the need to recognise the influence of the informal development of public spaces in line with the requirements of communities. A further area of research would therefore be to determine the value residents place on public spaces and the initiatives undertaken by residents to improve the quality of their public spaces. This research could serve to inform those involved with the planning and design of human settlements to better cater for the needs of the future residents and serve to create a viable, quality living environment as envisaged by housing policy.

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APPENDIX A: LIST OF INTERVIEW QUESTIONS

INTERVIEW QUESTIONS

1	What is your understanding of the principles and objectives of the Breaking New Ground Policy?
2.	What is your understanding of the term "Sustainable Human Settlement"? Do integrated housing developments contribute to sustainable human settlements?
3	What is your definition of the term "Public Space"
4	Do you consider Public Spaces important in the context of integrated housing developments? Why?
5	Are there standards/guidelines that must be adhered to in the provision of public spaces in housing developments?
6	How do you ensure that public spaces are included in a township layout?
7	From your experience, what benefit (if any) is attributed to public space?
8	From your experience, are the public spaces in housing developments being used as anticipated? Are residents receiving the intended benefits?
9	If not, please give reasons as to what has hampered this?
10	What can be done to make the public spaces more usable by the residents of housing developments?
11	In your experience, what becomes of public spaces/non-residential spaces that remain undeveloped?
12	What can be done in the planning stages of a development to ensure that public spaces are used as intended/envisaged?
13	In your experience what role does Local Government play in the provision of public spaces?
14	What monitoring and evaluation tools are in place to ensure the land uses initially envisaged are implemented according to the design?
15	Are there any forms of land use enforcement with regard to public spaces post-occupancy?

APPENDIX B: INFORMED CONSENT FOR INTERVIEWS

Date: _____.

University of Cape Town

To: Whom it may concern (Interviewee)

I, Michelle McGarry, am a student registered at the University of Cape Town in the Faculty of Engineering and the Built Environment, Student number – MCGMIC008.

I am currently in the process of conducting research for the submission of a research report as a requirement for my Master of Philosophy in Urban Infrastructure, Design and Management.

My research title is "From Housing to Human Settlements: The Role of Public Space in Integrated Housing Developments". The aim of the research is to understand how public spaces are conceptualised in policy and ultimately implemented in integrated housing developments. I am interested in finding out whether public spaces contribute to improving the quality of life of residents and to what extent the necessity for increased urban densification affected the provision of public space in integrated housing developments.

In order to complete my research I would like to interview people who have experience in the implementation of housing developments. Your participation is entirely voluntary, and should you decline to participate, there will be no negative consequences. If you choose to participate but wish to withdraw at any time, you will be free to do so without negative consequence. However, I would be grateful if you would assist me by allowing me to interview you.

I will use the information obtained from you together with the information from all the other participants to prepare a research report for the Faculty of Engineering and the Built Environment at the University of Cape Town. If you agree, the information reported will be attributed to you. All information obtained from the research will not be used to inform any work related tasks but will be used specifically for research purposes.

All information revealed will be treated with the utmost respect and confidentiality. If you wish, I will not use your name in my report and you are under no obligation to reveal your name to me. I will refer to you by the term Respondent and allocate a number to you.

Should you have any questions or complaints about the study, the interviews or the researcher, please do not hesitate to contact my supervisor, A/Prof Nancy Odendaal via email: nancy.odendaal@uct.ac.za.

Thank you for your willingness to participate. Below is the consent form for your signature.

I, _____, am willing to take part in this study and understand that my participation is voluntary and that I can withdraw from participating at any time, for whatever reason without penalty or loss.

Please sign if you are willing to allow your name to be recorded and used in any report or publication emanating from the research. You may still participate in this study even if you are not willing to have your name recorded.

_____

Please sign if you are willing to have this interview recorded (audio). You may still participate in this study even if you are not willing to be recorded.

_____

APPENDIX C: ETHICS CLEARANCE LETTER

Application for Approval of Ethics in Research (EiR) Projects
Faculty of Engineering and the Built Environment, University of Cape Town

APPLICATION FORM

Please Note:
Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data.The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook**(available from the UCT EBE, Research Ethics website) prior to completing this application form: http://www.ebe.uct.ac.za/usr/ebe/research/ethics.pdf

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant		Michelle Samantha McGarry
Department		Civil Engineering
Preferred email address of applicant:		mswpersie@gmail.com
If a Student	Your Degree: e.g., MSc, PhD, etc.,	MPhil Urban Infrastructure Design and Maintenance
	Name of Supervisor (if supervised):	Nancy Odendaal, PhD
If this is a researchcontract, indicate the source of funding/sponsorship		NA
Project Title		From Housing to Human Settlements: The Role of Public Space in Integrated Housing Developments

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	MS McGarry		09 Feb 2017

APPLICATION APPROVED BY	Full name	Signature	Date
Supervisor (where applicable)	A/Prof Nancy Odendaal		20 Feb 2017
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section1; and for all Undergraduateresearch (Including Honours).	Click here to enter text. M Van Niekerk		Click here to enter a date.
Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the above questions.	Click here to enter text.		Click here to enter a date.

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